HYDRO-QUÉBEC

SUSTAINABILITY REPORT 2011

HYDRO-QUÉBEC

Hydro-Québec generates, transmits and distributes electricity. Its sole shareholder is the Québec government. It uses mainly renewable generating options, in particular large hydro, and supports the development of other technologies—such as wind energy, biomass and small hydro—through purchases from independent power producers. It also conducts R&D in energy-related fields, including energy efficiency. The company has four divisions:

HYDRO-QUÉBEC PRODUCTION generates power for the Québec market and sells its surpluses on wholesale markets. It is also active in arbitraging and purchase/resale transactions.

HYDRO-QUÉBEC TRANSÉNERGIE operates the most extensive transmission system in North America for the benefit of customers inside and outside Québec.

HYDRO-QUÉBEC DISTRIBUTION provides Quebeccers with a reliable supply of electricity. To meet needs beyond the annual heritage pool, which Hydro-Québec Production is obligated to supply at a fixed price, it mainly uses a tendering process. It also encourages its customers to make efficient use of electricity.

HYDRO-QUÉBEC ÉQUIPEMENT ET SERVICES PARTAGÉS and Société d'énergie de la Baie James (SEBJ), a subsidiary of Hydro-Québec, design, build and refurbish generating and transmission facilities, mainly for Hydro-Québec Production and Hydro-Québec TransÉnergie.

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On the cover: Traditional cisco fishing at the foot of Smokey Hill rapids in the reduced-flow stretch of the Rivière Rupert, in the Baie-James region. Following the partial diversion of the river, Hydro-Québec worked with local fishermen and stakeholders to maintain traditional dip-net fishing conditions. Last fishing season, several thousand cisco were caught and distributed to the Cree community.

MAJOR FACILITIES AND GENERATING STATIONS SERVING OFF-GRID SYSTEMS

HYDRO-QUÉBEC GENERATING FACILITIES – 2011

FACILITIES[a]	NUMBER	MW	NET OUTPUT (GWh)
Hydroelectric generating stations	60	35,285	165,478 (97.9%)
Nuclear power plant	1	675	3,259 (1.9%)
Thermal power plants	27	1,011	280 (0.2%)
Total	**88**	**36,971**	**169,017 (100%)**

a) One hydroelectric generating station and 24 of the 27 thermal power plants serve off-grid systems.

Note: Hydro-Québec has access to almost all the output from Churchill Falls generating station (5,428 MW) under a contract with Churchill Falls (Labrador) Corporation Limited that will remain in effect until 2041. It purchases all the output from 12 wind farms (919 MW) and three small hydropower plants (23 MW) operated by independent power producers. Moreover, 1,215 MW are available under long-term contracts with other suppliers.

ACHIEVEMENTS, BY THEME

In the Baie-James region, a 735-kV line supported on cross-rope suspension towers connects Tilly substation to Le Moyne substation.

The *Sustainability Report 2011* provides an integrated description of the environmental, social and economic aspects of Hydro-Québec's activities, grouped under 11 representative themes. These themes cover the main issues that emerged from a materiality analysis and present the company's performance in those areas in 2011. Each one begins with a boxed text that briefly outlines the company's practices and how they have evolved from yesterday to today, and offers a prospective view of the practices of tomorrow.

01 GOVERNANCE

- Sustainability governance
- Financial results
- *Sustainable Development Action Plan 2009–2013*
- Dialogue with stakeholders

02 CLIMATE CHANGE

- GHG emissions from Hydro-Québec operations
- Atmospheric emissions from Hydro-Québec thermal generation operations
- Emissions avoided by net exports of electricity
- GHG emissions from the various generating options

03 ELECTRICITY DEMAND

- Changes in demand
- Exports
- Electricity rates

04 ENERGY EFFICIENCY

- Energy Efficiency Plan
- Energy efficiency of Hydro-Québec's facilities

05 ENERGY PORTFOLIO

- Net electricity generated and purchased by Hydro-Québec
- Information on renewable energies
- Environmental impact management—biodiversity, reduction, recovery, reuse and reclamation
- Progress of main generation and transmission projects
- Follow-up on projects in operation

06 PROJECT ACCEPTABILITY AND SPINOFFS

- Public participation
- Relations with Aboriginal communities
- Project spinoffs

07 RESPONSIBILITY FOR ELECTRICITY SERVICE

- Reliable electricity service
- Vegetation control
- Advanced metering infrastructure
- Customer satisfaction
- Fairness for customers

08 TECHNOLOGICAL INNOVATION

- Research and innovation
- Sustainable development innovation projects
- Ground transportation electrification
- Contribution to universities

09 HEALTH AND SAFETY

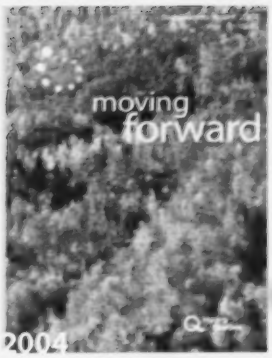
- Electric and magnetic fields
- Radio frequencies
- Mercury
- Facility security and public safety
- Employee health and safety
- Health care on remote jobsites

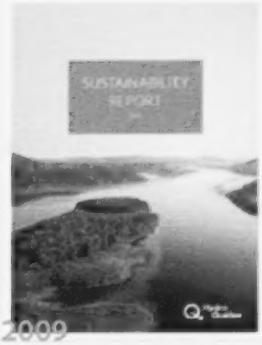
10 HUMAN RESOURCES

- Training, awareness and skills
- Hydro-Québec workforce
- Work environment
- Succession

11 COMMUNITY INVESTMENTS

- Donations and sponsorships
- Integrated enhancement program
- Fondation Hydro-Québec pour l'environnement





Ten years of reporting

Sustainability: Hydro-Québec's vision

Electricity is a necessity that contributes to quality of life. Meeting the electricity needs of people today, in a sustainable fashion, is very important. It is also crucial to use energy resources wisely and preserve the quality of the environment for future generations. Québec long ago opted for hydroelectricity, a sustainable energy source that helps reduce greenhouse gas emissions.

Naturally, Hydro-Québec's sustainability vision goes well beyond the strictly environmental issue. Our vision reflects our desire to understand stakeholders' concerns and expectations so that we can better take them into account in our choices, decisions and actions. It also expresses our determination to ensure the company's economic viability and contribute to the province's economic vitality.

ABOUT THIS REPORT

The *Sustainability Report 2011* describes Hydro-Québec's performance with respect to the main sustainability issues that lie before us.

This edition, published in May 2012, is the tenth such report produced by Hydro-Québec. To mark this anniversary, a brief retrospective introduces the 11 themes covered in the report, outlining the road traveled so far and the challenges yet to come.

SCOPE

The *Sustainability Report 2011* mainly addresses the issues and impacts of Hydro-Québec's activities in Québec throughout 2011. Reports from the four previous years are available on the company's Web site.

www.hydroquebec.com/publications/en/enviro_performance

NEW FEATURES

With a view toward continuous improvement, the *Sustainability Report 2011* includes the following new features:

- A materiality analysis of the information determining the selection of issues to be addressed.
- A modified structure to take the analysis results into account.
- An upgrade from level B to B+ of the Global Reporting Initiative (GRI), validated by the GRI (GRI Checked). A statement is provided on page 42.

MATERIALITY ANALYSIS

In collaboration with an outside firm, Hydro-Québec consulted internal and external stakeholders in fall 2011 on the materiality of the subjects addressed in its Sustainability Report. The object was to define the major issues to be discussed in the report; other issues are covered only on the Web site. A description of this exercise and its results may be found on page 5.

www.hydroquebec.com/sustainable-development/approche/pertinence.html

COMMUNICATION TOOLS

To reach the largest possible number of stakeholders, Hydro-Québec employs various tools for communicating and reporting on its sustainability. The main tools used are the following:

- *Sustainability Report 2011*
  www.hydroquebec.com/publications/en/enviro_performance
- A Web site on sustainable development containing further details
  www.hydroquebec.com/sustainable-development
- A brochure presenting 2011 sustainability highlights
  www.hydroquebec.com/publications/en/enviro_performance
- *Sustainable Development Action Plan 2009–2013*
  www.hydroquebec.com/publications/en/sd_action_plan
- A section of the *Annual Report 2011* dedicated to sustainability
  www.hydroquebec.com/publications/en/annual_report
- Videos
  www.youtube.com/hydroquebecvideo

REVIEW OF DATA

The quantitative data identified by the symbol ✓ were examined by Ernst & Young LLP. A review report is supplied on page 45.

GRI GUIDELINES

This report draws on the GRI's G3 guidelines and Electric Utilities Sector Supplement. These guidelines ensure the credibility and quality of sustainability reporting. The GRI has checked that the report complies with application level B+ of its six level guidelines. To learn more, readers can consult the partial GRI index on page 42 of this report or the complete index on Hydro-Québec's Web site.

www.hydroquebec.com/sustainable-development/gri

MESSAGE FROM THE PRESIDENT AND CHIEF EXECUTIVE OFFICER

A Noteworthy Record

According to the International Energy Agency, worldwide energy consumption continues to grow, but major disparities remain when it comes to access to renewable energy sources. In declaring the year 2012 *International Year of Sustainable Energy for All*, the United Nations General Assembly set out to raise global awareness about the importance of increasing sustainable access to energy, energy efficiency and renewable energy. In Québec, we are in the fortunate position of using water, a renewable energy source, to generate 98% of our electricity, and Hydro-Québec is continuing to tap the province's hydropower potential in accordance with the principles of sustainable development.

MEETING THE SHAREHOLDER'S EXPECTATIONS...

In 2011, Hydro-Québec recorded net income of $2,611 million, enabling us to pay our shareholder a dividend of $1,958 million. This result was made possible by the commitment of all our employees and the strong overall performance of our activity sectors.

At the operational level, our efficiency gains in 2011 allowed us to absorb cost increases stemming from inflation, salary indexation and growth of our operating assets. They also enabled us to reduce our current operating expenses by $89 million.

As regards growth, the Eastmain-1-A/Sarcelle/Rupert project, in the Baie-James region, will be completed in 2012, as scheduled. Eastmain-1-A powerhouse has gone into operation, and Sarcelle powerhouse will soon follow suit. In Minganie, our crews are hard at work on all the jobsites for the Romaine-2 structures. In Gaspésie, all the wind farms built in response to our 2003 tender call have been brought onto the grid.

... AND CUSTOMERS' EXPECTATIONS

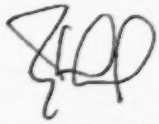
Today, Hydro-Québec's customers continue to enjoy electricity rates that are among the lowest in the world. The company is also striving for the highest possible levels of customer service quality. The advent of smart grids will bring about major changes in this regard. With that in mind, we plan to install next-generation meters to replace electromechanical devices that are reaching the end of their useful lives. These smart meters are a key component in an advanced metering infrastructure that will allow various operations to be performed remotely, such as automated reading of power consumption, more efficient disconnection and connection when customers move, faster outage detection, and more. Safe and secure in every way, this technology will also yield substantial savings for our customers.

WHILE REDUCING GHG EMISSIONS

Hydro-Québec's net electricity exports helped avoid 12 million tonnes of CO_2 emissions in 2011. That's the equivalent of the yearly emissions of 3 million vehicles.

The company is keeping up with advances in electric-vehicle technology. We also continued work on the development of battery materials and electric motors, and we were involved in setting up the first public charging network.

Our achievements in 2011 make us very proud indeed.



Thierry Vandal
President and Chief Executive Officer

MESSAGE FROM THE EXECUTIVE VICE PRESIDENT – CORPORATE AFFAIRS AND SECRETARY GENERAL

Continually Improving Our Practices

GOVERNANCE

Sustainability principles are incorporated into the company's day-to-day operations and its development projects through a solid system of governance. Establishing and maintaining occupational health and safety and environmental management systems enable Hydro-Québec to carry out its activities with all the requisite care.

The principles of good governance elicited a great deal of interest in 2011. As a major prime contractor, Hydro-Québec has long required its employees and its suppliers to abide by strict rules with respect to ethics. For example, the company's directors, executives, controllers and all its employees are bound by codes of ethics and rules of professional conduct.

To promote healthy competition and competitive prices for the company, Hydro-Québec obliges its suppliers to provide an official declaration that they comply with rules prohibiting any anti-competitive practices. Since last fall, it has demanded a statement from its suppliers confirming that they are in good standing with Québec's Ministère du Revenu. This government stipulation applies to all contracts worth $25,000 or more.

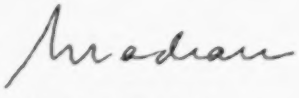
INFORMATION RELEVANCE ANALYSIS

Hydro-Québec is one of the first Québec companies to have published an annual report on sustainability. Every year, the company works to improve its performance reporting process by presenting its report to experts for their assessment and advice. These experts make recommendations on the measures required to continue integrating the principles of the Global Reporting Initiative guidelines.

Over the years, we have consulted the different stakeholders on several occasions. In 2011, we broke new ground by conducting a materiality analysis that involved members of our personnel in key positions and external stakeholders.

The comments of the parties consulted were taken into account in drawing up this report. At their request, we have overhauled the basic structure of the report in order to better demonstrate how the company incorporates the three components of sustainability—environment, society and economy—in carrying out its activities. We also prioritized certain issues to be addressed in this publication and chose others to be discussed only on the Web site. Finally, to provide a clearer understanding, we paid close attention to putting certain results in context.

The annual publication of the Sustainability Report calls for a tremendous effort in collecting, processing and reviewing data. Many people worked to produce it. Our hope is that the report will meet the expectations of our stakeholders. We consider that the *Sustainability Report 2011* makes new progress in achieving this goal, and we plan to maintain our efforts in the coming years.



Marie-José Nadeau
Executive Vice President –
Corporate Affairs and Secretary General

MATERIALITY ANALYSIS

Importance of Issues

SUMMARY OF CONSULTATION

In 2011, Samson Bélair/Deloitte & Touche assisted Hydro-Québec with a consultation of stakeholders on the company's sustainability reporting, specifically examining the materiality of subjects addressed in the Sustainability Report. A total of 96 organizations were invited to participate in a survey or in one of the workshops prepared and led by our firm. We consider the panel of respondents[1] to be representative of the diversity of Hydro-Québec's stakeholders and reflective of a genuine openness on the part of the company.

The survey, which was also submitted to employees, allowed us to assess the relative importance of various sustainability issues in terms of performance reporting. The results are shown above.

The panel of respondents made several observations on the *Sustainability Report 2010* as well as recommendations for future reports:

- Interesting report that addresses major issues on a host of relevant subjects. The inclusion of quantified data, some of which is audited by a third party, is appreciated.
- More information could be provided on the following subjects: health and safety, responsible procurement, refurbishment of Gentilly-2 nuclear generating station, health impacts of smart meters, ground transportation electrification and water body management, especially in relation to climate change.
- Additional explanations could be provided on certain actions that pose greater implementation challenges and on issues that are the subject of public debate (e.g., social acceptability of projects) as well as on Hydro-Québec's solutions and positions with regard to these issues.
- Improvement suggestions: present efforts made to reconcile environmental, social and economic challenges through the activities, contextualize actions described in the strategic objectives (sustainability target and framework) and provide perspective with regard to performance (comparison with industry peers, comments on progress of performance).
- The consultation initiative was applauded and respondents expressed their wish to see their comments taken into consideration in the next report. An annual follow-up of stakeholders' suggestions and comments was recommended as a demonstration of Hydro-Québec's commitment to continuous improvement.

Johanne Gélinas
Partner, Samson Bélair/Deloitte & Touche

1 Panel made up of 34 organizations that participated in the survey or workshop. The complete list of organizations is available at www.hydroquebec.com/sustainable-development/approche/pertinence.html.

A FEW FIGURES BY ACTIVITY SECTOR

GENERATION

- 3,749 employees, including 91% governed by an environmental management system
- 63 generating facilities connected to the main grid, including 59 hydropower stations (38 run-of-river)
- 26 large reservoirs, 579 dams and 97 control structures
- Revenue: $6.5 billion
- Net income: $1.7 billion

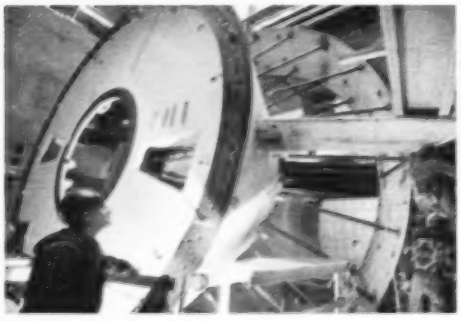
TRANSMISSION

- 3,216 employees, all governed by an environmental management system
- 33,630 km of lines
- 514 substations
- 174,387 ha of line rights-of-way to be maintained
- 17 interconnection points with the Atlantic provinces, Ontario and the U.S. Northeast
- Revenue: $3.1 billion
- Net income: $435 million

DISTRIBUTION AND CUSTOMER SERVICE

- 7,219 employees, all governed by an environmental management system
- 25 generating facilities connected to off-grid systems, including 24 thermal generating stations
- 113,525 km of lines[1]
- 4,060,195 customer accounts in Québec
- Revenue: $10.8 billion
- Net income: $374 million

1. This figure includes off-grid systems but excludes private systems, lines under construction and 44-kV lines (transmission).



CONSTRUCTION

- 1,836 employees,[1] including 52% governed by an environmental management system
- 2 major projects under construction for a capacity of 2,468 MW and a total investment of $11.5 billion
- Over 1,200 projects for the transmission system and for the integration of new hydropower and wind power capacity: a $1.3 billion investment
- Hydroelectric projects: 3,065 worksite jobs for contractors
- Volume of activity: $2.1 billion

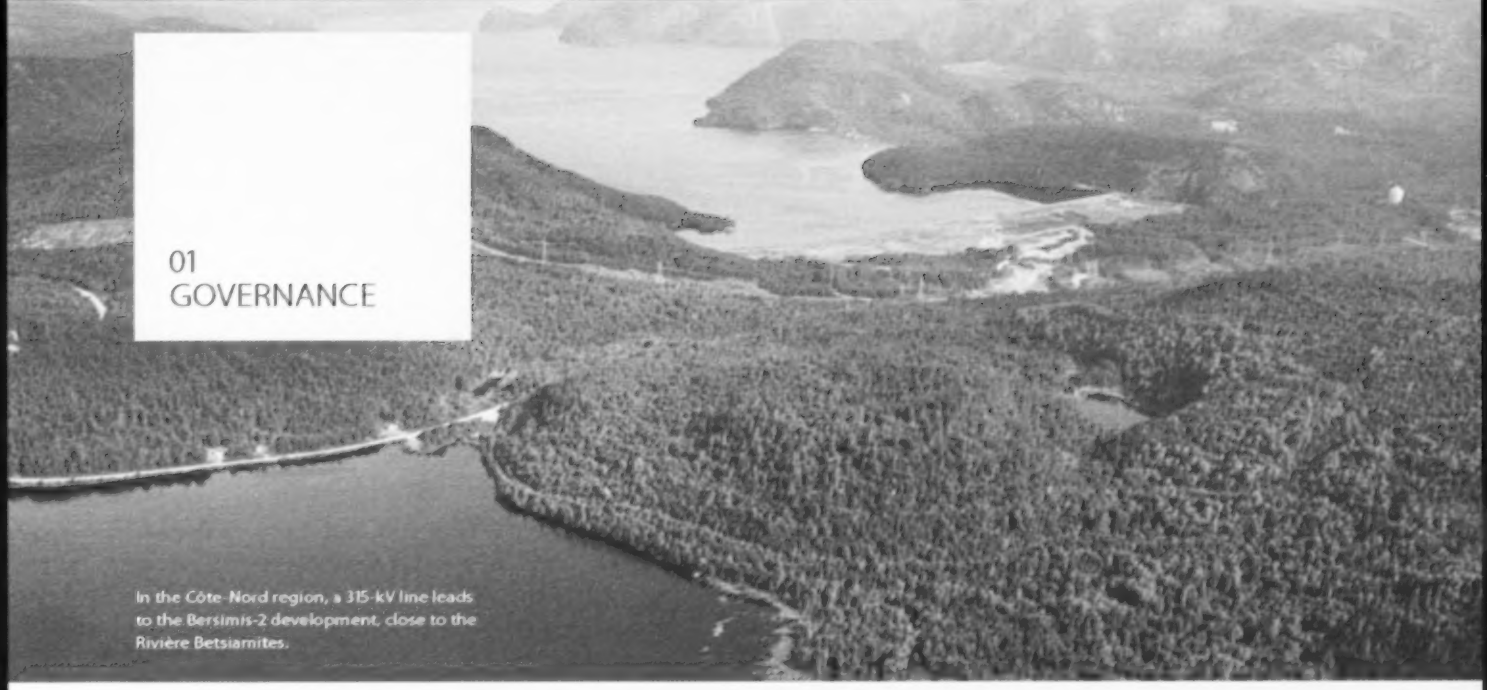
1. Including SEBJ employees.

TECHNOLOGY

- 2,761 employees, including 95% governed by an environmental management system
- Activities: R&D, telecommunications and IT
- Extensive private telecommunications network with 973 geographic locations
- Annual budget allocated to Hydro-Québec's research institute: $100 million

CORPORATE ACTIVITIES

- 3,761 employees, including 45% governed by an environmental management system
- Activities: governance, accounting and control, procurement, building management, transportation services, human resources, communications, community relations, industrial security, etc.



01 GOVERNANCE

In the Côte-Nord region, a 315-kV line leads to the Bersimis-2 development, close to the Rivière Betsiamites.

YESTERDAY

In 1997, North America's wholesale electricity markets opened up to competition and Hydro-Québec unbundled its operations. The following year, the company began implementing ISO 14001–compliant environmental management systems in order to maintain its careful approach to the environment.

TODAY

The ISO 14001 environmental management systems, which are still in effect, promote ongoing improvement in our environmental performance.

TOMORROW

The various management systems (quality, environment, health/safety) will become increasingly integrated with a view to providing greater efficiency. Hydro-Québec will continue contributing to the progress of environmental and corporate responsibility standards.

Sustainability governance calls on the accountability of all the company's personnel and is based on the 12 company policies approved by the Board of Directors. The principles stated in these policies are defined through guidelines and codes of conduct. They complement the *Strategic Plan 2009–2013*, the *Sustainable Development Action Plan 2009–2013* and the division and group business plans.

www.hydroquebec.com/publications/fr/politiques/pdf/recueil_politiques.pdf (in French only)

Good governance is also based on responsible procurement procedures that promote healthy competition and competitive prices for the company. It implies an efficient management of resources and risks, and translates as solid financial results and the creation of value that benefits the entire population through a dividend that is paid annually to the Québec government.

www.hydroquebec.com/financing/fait_saillant.html

2011 HIGHLIGHTS

- Net income: $2,611 million, exceeding the *Strategic Plan 2009–2013* projection of $2,400 million.
- Dividend to be paid to the Québec government: $1,968 million
- Continued participation in the activities of ECPAR (Espace québécois de concertation sur les pratiques d'approvisionnement responsable)

www.ecpar.org

MAIN SUSTAINABILITY GOVERNANCE ACTIVITIES

Performance reporting — Accountability

BOARD OF DIRECTORS

- **Seven committees, including:** Governance and Ethics, Environment and Public Affairs, Human Resources
- **Approval or review of publications, including:** company policies, code of ethics, Strategic Plan, Business Plan, Annual Report, Sustainability Report

PRESIDENT AND CHIEF EXECUTIVE OFFICER

- **Approval of the following documents:** internal guidelines, Code of Conduct for employees, Sustainable Development Action Plan
- **Annual management reviews**

HYDRO-QUÉBEC ADMINISTRATIVE UNITS

- **Various internal networks discussing issues such as environment and workplace health and safety**
- **Maintenance of certified management systems**

www.hydroquebec.com/publications/en/organization_chart/haute_direction_en.pdf

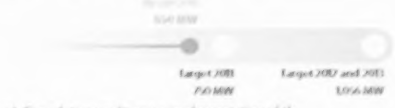
Sustainable Development Action Plan 2009–2013

Published in March 2009, the *Sustainable Development Action Plan 2009–2013* expresses Hydro-Québec's commitment to Québec's *Government Sustainable Development Strategy 2008–2013*. Every year, in the Sustainability Report, Hydro-Québec provides a formal account of the progress made on the 10 actions that form the Plan.

www.hydroquebec.com/publications/en/sd_action_plan

ACTION 1 BUILD HYDROPOWER PROJECTS AND CONTRIBUTE TO THE DEVELOPMENT OF WIND POWER

Capacity and energy available[a]



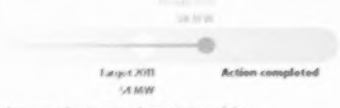
a) Cumulative results since implementation of the Sustainable Development Action Plan 2009–2013.

Work at the Eastmain and Romaine jobsites progressed at a good pace (pages 22 to 25). In 2011, two of the generating units at Eastmain-1-A powerhouse (512 MW) were commissioned. Factoring in the 138 MW from the Chute-Allard and Rapides-des-Cœurs developments, the result for 2011 was 650 MW. In January 2012, the third generating unit at Eastmain-1-A powerhouse (256 MW) was commissioned. Result: the 2011 target was exceeded at the start of the following year.

In the Gaspésie region, Mont-Louis, Gros-Morne and Montagne-Sèche wind farms were brought onto the grid, concluding the work related to the 2003 call for 1,000 MW of wind power. We also completed the first stages in the project to integrate 2,000 MW of wind capacity contracted further to a tender call issued in 2005: we connected Le Plateau wind farm (Gaspésie) and broke ground on the 315 kV line that will connect Lac-Alfred wind farm (Bas-Saint-Laurent).

ACTION 2 INCREASE THE CAPACITY OF EXISTING HYDROELECTRIC GENERATING STATIONS

Gains in peak capacity[a]

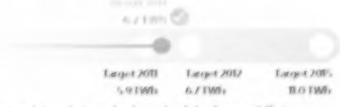


a) Cumulative results since implementation of the Sustainable Development Action Plan 2009–2013.

The cumulative target of 54 MW, set for 2011, was exceeded. In 2011, work on speed governors at Rocher-de-Grand-Mère generating station brought about an additional gain of 6 MW in capacity. The cumulative gain in 2010 was 52 MW.

ACTION 3 STEP UP ENERGY EFFICIENCY INITIATIVES

Recurring energy savings[a]

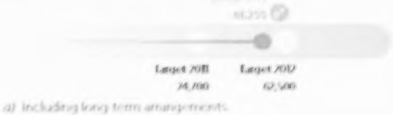


a) Savings achieved since the launch of the Energy Efficiency Plan in 2003, including projects of the Québec government's Bureau de l'efficacité et de l'innovation énergétiques and the CATVAR project.

New savings of 99.5 GWh in 2011 brought the total annual savings achieved to date to 6.2 TWh. Through innovation and the development of programs that are tailored to customers' needs, we plan to reach the cumulative objective of 11 TWh by 2015. Detailed results are presented on pages 16 and 17.

ACTION 4 CONTINUE TO HELP LOW-INCOME CUSTOMERS

Number of arrangements with low-income customers[a]

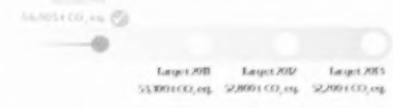


a) Including long-term arrangements.

In 2011, Hydro-Québec reached 61,256 special payment arrangements with low-income customers for a gross total of $292.9 million. The significant increase in the number of arrangements concluded is the result of new eligibility criteria and the efforts made to offer these customers payment arrangements tailored to their circumstances. The 2012 target was revised upward to 62,500 arrangements. More information is available on page 32.

ACTION 5 REDUCE TRANSPORT-RELATED GHG EMISSIONS

Atmospheric emissions from the vehicle fleet

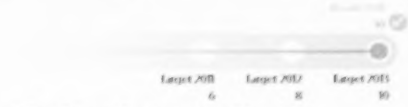


Given the growth in our activities, the 2013 target will be hard to reach despite the deployment of various action plans. To date, emissions have decreased by 3.4% compared to 2005. A 0.5% drop (25.5 t CO_2 eq.) was recorded in 2011, resulting mainly from reduced light-vehicle emissions. Over the course of the year, 10 Chevrolet Volts were added to the company's light-vehicle fleet. We tested five hybrid buckets on heavy trucks, powered by a set of batteries instead of the truck's motor. Agreements with bus fleet operators were renewed to provide transportation for employees who work at generating stations in the Mauricie region.

The latest results from the survey on the transportation habits of employees show that a large number of them have switched from single-occupant cars to more sustainable modes of transportation.

ACTION 6 PROMOTE REDUCTION AT SOURCE, REUSE AND RECYCLING

Number of at-source reduction or reclamation programs introduced or optimized[a]

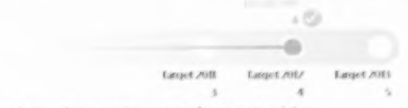


a) Cumulative results since implementation of the Sustainable Development Action Plan 2009-2013.

Four programs ended in 2009 and three in 2010. Three other programs ended in 2011: the reintroduction of refurbished palettes for the supply of distribution transformers, and the expanded recovery programs for plastic packaging and for other mixed use plastics. Although the 2013 cumulative target has been reached, we will maintain our efforts to improve our recovery of residual material over the next two years.

ACTION 7 ESTABLISH SPECIFICATIONS FOR SUSTAINABLE PROCUREMENT

Number of product purchasing guides that include sustainable specifications[a]



a) Cumulative results since implementation of the Sustainable Development Action Plan 2009-2013.

In 2011, a purchasing guide for industry specific wiping products was added to the list of guides already available. The sustainable specifications are based on potential uses and are designed mainly to reduce product weight and promote products that contain recycled fibres and have relevant environmental certifications.

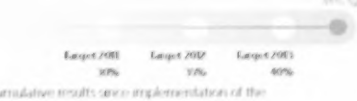
ACTION 8 INFORM AND EDUCATE EMPLOYEES REGARDING SUSTAINABILITY AND THE COMPANY'S APPROACH. HELP EMPLOYEES LEARN TO APPLY SUSTAINABILITY PRINCIPLES TO THEIR DAILY ACTIVITIES

Percentage of employees educated

A telephone survey was conducted to determine the percentage of employees aware of sustainability; 2,001 employees were surveyed between October 27 and December 2, 2011. The maximum margin of error is ± 2.0%. In 2011, information sheets entitled *Le principe du mois* [this month's principle] were published to familiarize employees with the principles of the *Sustainable Development Act*. Every sheet showed how a principle is applied by the company and explained how employees can play a part in implementing it.

Throughout the year, Hydro Québec continued its efforts to increase employee awareness. In a company like Hydro Québec, the 80% target represents more than 18,000 employees. Even though the first component of action 8 was completed in 2011, we will keep up our awareness raising activities over the next few years.

Percentage of employees having sufficient knowledge about sustainability[a]



a) Cumulative results since implementation of the Sustainable Development Action Plan 2009-2013.

In 2010, to harmonize with the public administration as a whole, the 40% employee sustainability training objective, initially set for 2011, was pushed back to 2013. Nonetheless, the company made significant efforts in 2011 to launch an online training program called *Agir en faveur du développement durable* [acting toward sustainability]. Result: the 2013 target was reached.

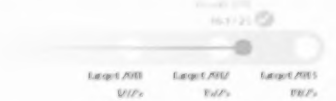
ACTION 9 IMPROVE VEGETATION CONTROL METHODS ON THE DISTRIBUTION SYSTEM TO BETTER PROTECT BIODIVERSITY

Percentage of vegetation control operations per year with integrated measures for promoting biodiversity

In 2011, a very high percentage of priority requirements that promote biodiversity were maintained. Several information and awareness sessions were offered to municipal organizations and contractors. We adopted new contractual clauses on the management of wood waste.

ACTION 10 ORGANIZE SUSTAINABLE EVENTS AND PROMOTE RESPONSIBLE MANAGEMENT OF EVENTS SPONSORED BY HYDRO-QUÉBEC

Average number of contributing measures implemented among the 25 measures selected for the sustainable management of events



In 2011, the performance of 128 events was assessed with regard to action 10. Sustainable measures are increasingly integrated in all of the company's activities, from meetings to special events. An intranet site and various tools have been made available to employees and managers to promote the organization of sustainable events.

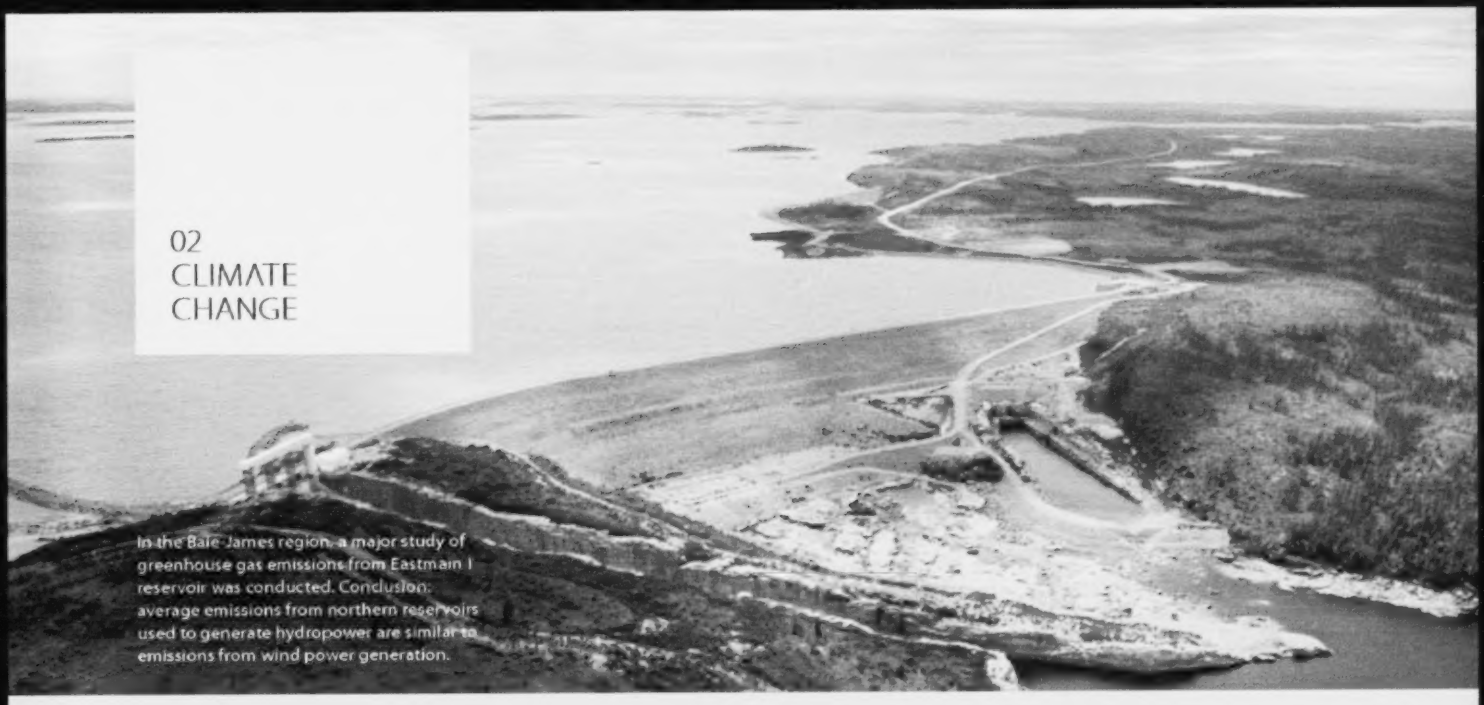
DIALOGUE WITH STAKEHOLDERS

Owing to the nature of its operations, Hydro Québec has a presence throughout the province and maintains ongoing relations with its numerous stakeholders. Good dialogue is essential for preserving mutually beneficial relations, obtaining support for important activities and even reconciling diverging interests.

Over the years, Hydro Québec has established various collaborative means for gaining insight into its stakeholders' expectations and concerns. These mechanisms complement regular activities carried out with organizations such as the Régie de l'énergie and the Bureau d'audiences publiques sur l'environnement.

STAKEHOLDERS	SUSTAINABILITY ISSUES	EXAMPLES OF MEANS USED	2011 RESULTS
Customers	▪ Services tailored to low-income customers and others with payment difficulties ▪ Fairness toward all customers ▪ Increasing energy savings ▪ Customer satisfaction ▪ Reliability of electricity service	▪ Working group with consumer associations ▪ Energy efficiency partnerships ▪ Table of customer expectations ▪ Survey of customer satisfaction ▪ Mechanism for handling complaints and claims	▪ Payment arrangements with low-income customers (p. 32) ▪ Energy Efficiency Plan (p. 16-17) ▪ Overall customer satisfaction index (p. 31) ▪ Complaints and claims (p. 31) ▪ System average interruption duration index (p. 30)
Educational institutions	▪ Development of a skilled workforce ▪ Education on key issues related to electricity	▪ Contribution to universities ▪ Technological partnerships ▪ Presentations given at universities	▪ Contribution to universities (p. 35) ▪ Funding of IEPE (p. 35, 39) ▪ Partnerships in the area of electrification of ground transportation (p. 34-35)
Employees	▪ Understanding of sustainability ▪ Sustainability principles applied to daily activities ▪ Healthy and safe work environment ▪ Skill development ▪ Succession	▪ Sustainability training ▪ Awareness of sustainability principles ▪ Training on harassment prevention offered by the company and unions ▪ Workplace health and safety committees ▪ Survey on employee commitment	▪ Percentage of employees aware of sustainability (p. 9) ▪ Number of employees with sustainability training (p. 9) ▪ Work-related accident frequency (p. 37) ▪ Harassment prevention training (p. 39) ▪ Overall employee commitment index (p. 39)
General public	▪ Public health and safety ▪ Public satisfaction ▪ Respect for the environment ▪ Acceptability of projects	▪ Execution of studies and dissemination of information on public health and safety ▪ Web site and toll-free line (1 800 363-7443) ▪ Videos	▪ Studies of electric and magnetic fields (p. 36) ▪ Information on radio frequency emissions (p. 36) ▪ Studies on mercury (p. 36-37) ▪ Television campaigns on safe behaviors (p. 37) ▪ Community investments (p. 40-41) ▪ Energy portfolio (p. 18-27) ▪ Public participation (p. 28-29)
Government authorities	▪ Information sharing ▪ Contribution to the Plan Nord, the Québec Energy Strategy, Québec's Government Sustainable Development Strategy, the Climate Change Action Plan and the Action Plan for Electric Vehicles	▪ Partnerships and participation in joint committees	▪ Financial results (p. 7) ▪ Sustainable Development Action Plan (p. 8-9) ▪ Progress of generation and transmission projects (p. 22-26) ▪ Electrification of ground transportation (p. 34-35) ▪ Environmental impact management (p. 21)
Investors	▪ Good governance ▪ Risk management ▪ Company profitability	▪ Periodic meetings with investors on results and risk management ▪ Dedicated Web site for investor relations ▪ Financial Profile	▪ Financial results (p. 7) ▪ Codes of ethics and rules of professional conduct (p. 4) ▪ Requirements for suppliers (p. 4) ▪ Fight against climate change (p. 11-12)
Local and Aboriginal communities	▪ Acceptability of projects ▪ Integration of facilities into the environment ▪ Respect for local values and cultures ▪ Economic spinoffs	▪ Teams in charge of community and Aboriginal relations ▪ Partnering arrangements ▪ Liaison committees with municipal associations ▪ Support for local initiatives in connection with projects and other activities	▪ Progress of generation and transmission projects (p. 22-26) ▪ Follow-up on projects in operation (p. 27) ▪ Partnering agreements (p. 28) ▪ Public participation (p. 28-29) ▪ Integrated Enhancement Program (p. 41)
Non-governmental organizations	▪ Establishment of mutually beneficial relationships	▪ Working group with consumer associations ▪ Various partnerships ▪ Community investments ▪ Liaison committee with the Union des producteurs agricoles (Québec farm producers' union)	▪ Working group with consumer associations (p. 32) ▪ CQACC (p. 13) ▪ Partnerships in the area of electrification of ground transportation (p. 34-35) ▪ Community investments (p. 40-41) ▪ Maison du développement durable (p. 41)
Suppliers	▪ Sustainable practices ▪ Maximization of economic spinoffs ▪ Ethical behavior	▪ Partnerships ▪ Espace québécois de concertation sur les pratiques d'approvisionnement responsable (ECPAR) ▪ Dedicated Web site for suppliers ▪ Economic spinoffs committees	▪ Purchasing guide for industry-specific wiping products (p. 9) ▪ Participation in ECPAR (p. 7) ▪ Procurement within Québec (p. 29) ▪ Economic spinoffs committees (p. 23, 29) ▪ International partnerships (p. 33)
Unions	▪ Harmonious labor relations	▪ Health and safety committees ▪ Training programs offered by the company and unions	▪ Harassment prevention training (p. 39) ▪ Collective agreements (p. 39)

02
CLIMATE CHANGE



In the Baie-James region, a major study of greenhouse gas emissions from Eastmain 1 reservoir was conducted. Conclusion: average emissions from northern reservoirs used to generate hydropower are similar to emissions from wind power generation.

YESTERDAY

Signed in December 1997, the Kyoto Protocol came into effect in February 2005. The 168 signing countries wished to reduce their greenhouse gas emissions by 5.2% compared to 1990 levels. Deadline: between 2008 and 2012.

TODAY

Climate change is a global issue. With hydropower accounting for 98% of Hydro-Québec's output, the company produces very low levels of GHG emissions. In fact, in 2011, our net exports to neighboring systems helped avoid 12 million tonnes of CO_2 emissions.

TOMORROW

We will see the emergence of a regional North American carbon market and an increase in the number of hybrid and electric vehicles on our roads.

According to the Intergovernmental Panel on Climate Change (IPCC), atmospheric concentrations of GHGs have increased considerably since 1850 as a consequence of human activity. This increase is mainly attributable to the use of fossil fuels.[1] Despite the financial crisis and economic uncertainty of the last few years, global energy demand continues to rise.[2] In light of these realities, countries are trying to unite in the fight against climate change. Their main strategies are the development of renewable energies and more efficient use of electricity. At the same time, countries are also looking for solutions in terms of adapting to the effects of climate change.

FIGHT AGAINST CLIMATE CHANGE

According to data compiled by the Canadian Electricity Association for 2009, hydropower accounted for 63.2%[3] of power generation in Canada. The electricity sector generated 14% of total GHG emissions in Canada, behind industry (36%) and transportation (28%).[4]

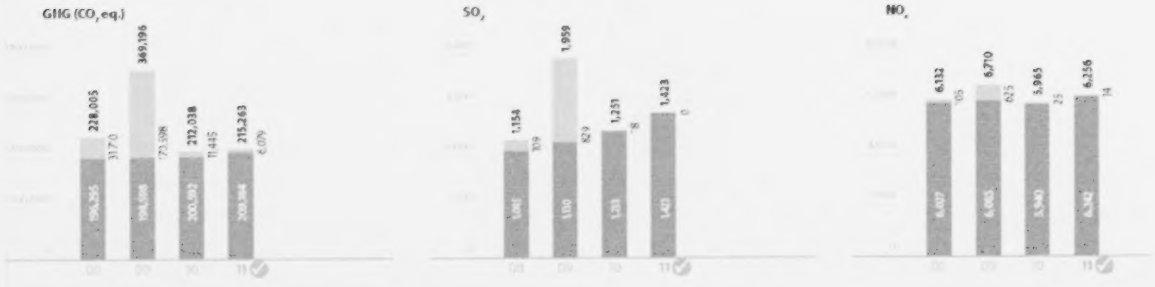
Most electricity in Québec is produced by Hydro-Québec, which uses water to generate 98% of its output. In 2009, the province's electricity sector represented 0.8% of total GHG emissions, the transportation sector (on road, air, marine, rail, off road) 44%, and industry 28%. Relative to its population, Québec produced significantly lower GHG emissions (10.4 t CO_2 eq. per capita)[5] in 2009 than the rest of Canada (16.3 t CO_2 eq. per capita).[6]

Hydro-Québec is actively involved in the fight against climate change. The company's three main strategies revolve around promotion of energy efficiency, development of renewable energies and technological innovation.

In addition, since the road transportation sector alone accounts for almost a third of GHG emissions in Québec,[7] several years ago Hydro-Québec undertook to play a part in the development of hybrid and electric vehicles. More recently, the company announced the deployment of a first public charging infrastructure.

1. www.ipcc.ch/pdf/special-reports/srren/SRREN_FD_SPM_final.pdf
2. www.iea.org/Textbase/npsum/weo2011sum.pdf
3. www.electricity.ca/media/pdfs/Electricity%20Generation%20in%20Canada%20by%20Fuel%20Type%202009.pdf
4. Canada National Inventory Report 1990 -2009: Greenhouse Gas Sources and Sinks in Canada
5. www.mddep.gouv.qc.ca/changements/ges/2009/inventaire1990-2009.pdf (in French only)
6. http://perspectivesusherbrooke.ca/balan/servlet/IIMEendanceStatPays?langue=fr&codePays=CAN&codeStat=EN.ATM.CO2E.PC&codeStat2=x (in French only)
7. www.mddep.gouv.qc.ca/changements/ges/2009/inventaire1990-2009.pdf (in French only)

ATMOSPHERIC EMISSIONS FROM HYDRO-QUÉBEC THERMAL GENERATION OPERATIONS (t)



Generating stations connected to the main grid Generating stations supplying off-grid systems

Most emissions are from thermal power plants supplying off-grid systems. The drop in emissions from 2009 is due to the reduced use of Tracy generating station, which was shut down permanently on December 31, 2011. In 2010, Hydro-Québec recorded SO_2 emissions of 0.01 t/GWh, compared to the 3.46 t/GWh emitted by all the Canadian Electricity Association member companies combined. Hydro-Québec's NO_x emissions were 0.04 t/GWh, compared to 1.76 t/GWh.
www.sustainableelectricity.ca/media/2010%20Annual%20Report/CEA_2010SI Report_June2011.pdf

In December 2011, the Québec government adopted the *Regulation respecting a cap and trade system for greenhouse gas emission allowances*. Québec thus became the second member of the Western Climate Initiative (WCI), after California, to set up such a system. Ontario, British Columbia and Manitoba will soon be joining the group, spurring the emergence of a real North American carbon market.

ADAPTATION TO CLIMATE CHANGE

For a hydropower producer like Hydro-Québec, changes in climatic conditions are of critical importance. In fact, the latest IPCC studies suggest that thermal and precipitation regimes could be considerably altered over the coming decades, particularly in high latitudes.

In terms of demand, according to the median scenario determined by the Ouranos consortium, global warming could lead to a decrease in the demand for heating, which will be partially offset by rising air conditioning needs. On the supply side, the new climatic conditions are likely to alter the hydraulic regime. Ouranos estimates that, in Québec, climate change could mean a 1% to 15% increase in natural inflows by 2050.

In the past 20 years, unusual weather events, such as the flooding in the Saguenay region in 1996 and the ice storm in 1998, have highlighted the importance of having facilities that can handle the vagaries of the climate.

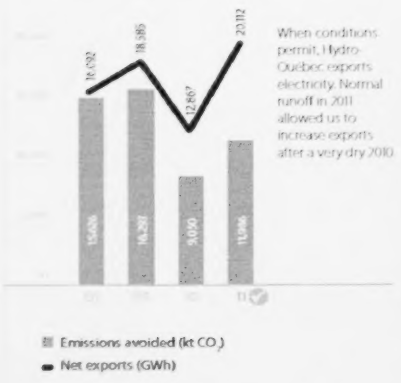
Hydro-Québec is continuing research efforts to improve its knowledge on climate evolution, particularly changes in weather and in the precipitation regime. We apply the knowledge of researchers and research groups working within the company or for partner universities. Combined with the hydrology expertise of specialists from Hydro-Québec and Hydro-Québec's research institute, IREQ, this scientific knowledge contributes to the development of expertise in climate and hydrology modeling.

GHG EMISSIONS FROM HYDRO-QUÉBEC OPERATIONS 2011

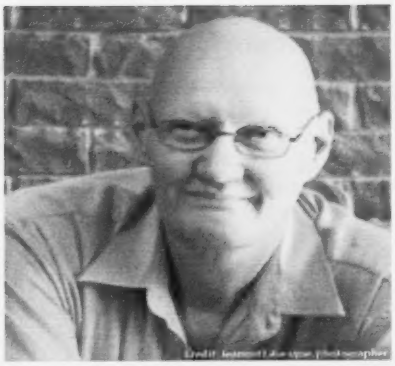
CATEGORY	OPERATIONS	EMISSIONS (t CO_2 eq.)
Direct sources (level 1)		
Generating stations	Thermal power plants	215,263
Mobile sources	Vehicle fleet	56,005
	Hydro-Québec aircraft fleet	12,304
	Utility vehicles (e.g., snowmobiles, tractors, snowblowers)	801
	Propane-fueled lift trucks	106
Fuel use	System maintenance generators	6,272
	Emergency and jobsite generators	2,097
	Building heating	868
Other uses	Equipment containing CF_4 and SF_6	31,309
	Aerosols	581
Indirect sources (level 2)		
Energy losses	Losses related to power transmission and distribution[a]	96,881
Total direct emissions (level 1)		**325,606**
Total indirect emissions (level 2)[a]		**96,881**
Emissions avoided by net exports of electricity[a]		**11,986,065**

a) Emissions in t CO_2 only.

EMISSIONS AVOIDED BY NET EXPORTS OF ELECTRICITY



The 300,000th refrigerator in the RECYC-FRIGO Environnement™ program was picked up on March 17, 2011. To mark the event, program manager Johanne Daviau presented a basket of energy-efficient products to the appliance's owner, Bruno Houle.



Electricity is a very convenient energy vector. However, over its life cycle and depending on its source, it may be responsible for large quantities of GHG emissions—for example, when fossil fuels are used to produce it. In the last few years, it has been claimed that hydropower generation is a major emitter of GHGs. But what are the facts?

University studies indicate that the emissions from the generation of one hydro-powered kilowatthour are mainly derived from three sources: the construction of dams, generating stations and transmission lines, the decomposition of organic matter in reservoirs and the loss of natural carbon sinks caused by the flooding of forests during reservoir impoundment. In northern regions, these emissions, spread over the service life of a generating station, are equivalent to the emissions from the generation of one wind-powered kilowatthour, and can even be much lower.

CLAUDE VILLENEUVE
Professor and Director, Éco-Conseil Chair
Université du Québec à Chicoutimi

2011 HIGHLIGHTS

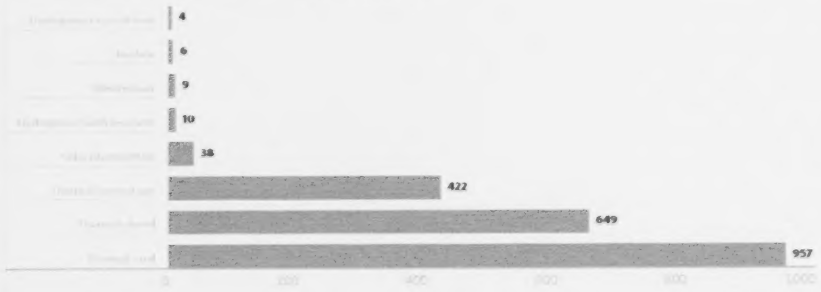
- Atmospheric emissions from power generation and purchases in Québec were significantly lower than the average for neighboring provinces and states in Canada and the U.S.: 6,501 t CO_2 / TWh (66 times less than the average), 16 t SO_2 / TWh (57 times less) and 19 t NO_x / TWh (38 times less).

www.hydroquebec.com/developpementdurable/documentation/pdf/etiquette_achats_fr.pdf (in French only)

- Emissions avoided through the recovery of CFCs under the RECYC-FRIGO Environnement™ program: 160,304 t CO_2 eq. in 2011, for a total of 867,207 t CO_2 eq. since the beginning of the program in 2008 — equivalent to annual emissions from 217,000 vehicles.

- The company continued its partnership with the Centre québécois d'actions sur les changements climatiques (CQACC), an umbrella association of Équiterre, the Regroupement national des conseils régionaux de l'environnement du Québec, the Conseil régional de l'environnement de Montréal, l'Environnement Jeunesse (Enjeu), Vivre en ville and the Centre de l'environnement — Écobâtiment. Hydro-Québec provides financial support for community-based projects to reduce GHG emissions.

GHG EMISSIONS FROM THE VARIOUS GENERATING OPTIONS LIFE CYCLE[a] – AVERAGE VALUES (g CO_2 eq./kWh)



a) GHG emissions generated by the technologies used in northeastern North America, taking into account the construction and operation of facilities as well as fuel supplies, where applicable.

03 ELECTRICITY DEMAND

A wire-free residential neighborhood in Blainville (Laurentides). Electricity demand keeps step with the region's strong population growth.

YESTERDAY

In 2002, electricity demand in Québec totaled 158.6 TWh. The average annual growth rate between 2000 and 2010 was 1.1%, mainly attributable to the formation of new households.

TODAY

In 2011, electricity demand totaled 170.0 TWh. Against all expectations, industrial demand is down compared to 2002. However, the number of new residential connections is on the rise, going from an average of 22,000 per year between 1995 and 2001 to an average of 50,000 per year since 2003.

TOMORROW

In 2020, electricity demand is expected to reach 183.5 TWh. The average annual growth rate will decrease to about 0.7%, reflecting moderate population growth as well as energy efficiency initiatives.

Heritage pool

Established in 2000 by the* Act respecting the Régie de l'énergie, *the heritage pool is the maximum annual amount of electricity (165 TWh) that Hydro-Québec Production is required to provide Hydro-Québec Distribution to meet domestic demand. The price of heritage pool electricity is set by the* Act *at 2.79¢/kWh. To meet needs above this volume, Hydro-Québec Distribution enters into supply contracts with electricity providers based on market price.

CHANGES IN DEMAND

Quebecers are major consumers of electricity, second only to Icelanders and followed by Norwegians.[1] These consumption levels are explained by the following factors: the presence of many major industrial consumers, use of electric heating and availability of low rates that make certain energy efficiency measures less profitable. It is estimated that 77% of Québec households use electricity as their main energy source for heating and that over 90% use it to heat water. Approximately 45% of the electricity demand at winter peak is for these two needs.

Québec's energy portfolio consists of primarily renewable energies. Therefore, based on a life-cycle analysis, electric heating is clearly the most sustainable option.

Domestic sales volume rose to 170.0 TWh, compared to 169.5 TWh in 2010. This increase is essentially due to winter temperatures that were closer to normal in 2011, whereas they had been exceptionally mild in 2010. Industrial customers and residential customers each consume about 40% of the electricity in Québec; commercial and institutional customers consume less than 20%.

2011 HIGHLIGHTS

- The Régie de l'énergie approved our *Electricity Supply Plan 2011–2020* and we filed the Electricity Supply Plan progress report.
- Winter peak capacity requirements in 2011–2012: 35,481 MW (37,717 MW at 2010–2011 winter peak).
- Electricity sales outside Québec: 26.8 TWh (23.3 TWh in 2010).

1. www.mrnf.gouv.qc.ca/energie/statistiques/statistiques-consommation-electricite.jsp (in French only)

During the winter in Montréal, sometimes the cold is so intense that a thick fog covers the Saint-Laurent. On the morning of January 16, 2012, electricity demand reached 35,481 MW.

Electronic thermostats allow customers to save on heating costs. In Québec, 77% of households use electricity as their main source of heating energy.

EXPORTS

Hydro-Québec exports its surpluses to outside markets, thereby contributing to the company's profitability. For example, in 2011, net exports generated $398 million, accounting for 11% of net sales volume and 15% of the company's net income.

ELECTRICITY RATES

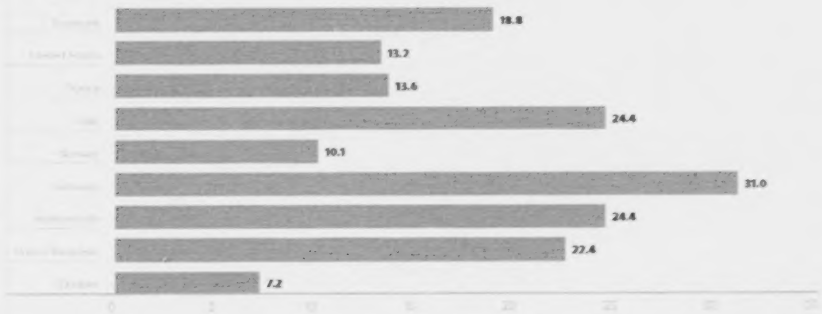
In Québec, electricity rates are approved by the Régie de l'énergie. The Régie analyzes the various components of the cost of electricity service and determines a reasonable return. Because of the heritage pool, electricity rates in Québec are among the lowest in the world.

www.hydroquebec.com/publications/en/comparison_prices

2011 HIGHLIGHTS

- In March 2011, the Régie de l'énergie authorized an across-the-board rate reduction of 0.41%, effective April 1, 2011.
- In March 2012, the Régie authorized an across the board rate reduction of 0.45%, effective April 1, 2012.

WORLD ELECTRICITY PRICES – QUÉBEC AND CERTAIN INDUSTRIALIZED COUNTRIES RESIDENTIAL SECTOR (2009) (¢/kWh)



Note: Prices correspond to the average unit revenue from electricity sales and do not include sales tax.
Source: www.mrn.gouv.qc.ca/energie/statistiques/statistiques-energie-prix-electricite.jsp (in French only)

COMPARATIVE INDEX OF ELECTRICITY PRICES AT APRIL 1, 2011 – RESIDENTIAL CUSTOMERS[a]

Montréal, QC	100
Winnipeg, MB	107
Vancouver, BC	113
St. John's, NL	161
Moncton, NB	173
Ottawa, ON	182
Toronto, ON	189
Halifax, NS	200
Regina, SK	202
Charlottetown, PE	213
Edmonton, AB	240
Calgary, AB	256

a) Monthly bill (before taxes) for consumption of 1,000 kWh.

The rate applicable to Hydro-Québec's residential customers is among the lowest in North America. For a typical consumption of 1,000 kWh per month, Montréal once again ranked first.

www.hydroquebec.com/publications/en/comparison_prices

04 ENERGY EFFICIENCY

Hydro-Québec's stand at the National Home Show, presenting the new *Dare to Compare* service. This service allows our residential customers to compare their electricity consumption to that of similar households and find out whether they are energy-efficient or energy-hungry.

YESTERDAY

Hydro-Québec filed its Energy Efficiency Plan (EEP) with the Régie de l'énergie in 2002. The EEP consisted of 16 programs and targeted energy savings of 0.75 TWh by 2006.

TODAY

The current target is 11 TWh in energy savings by 2015, equivalent to the annual consumption of 407,000 Québec households heating with electricity. In 2011, Hydro-Québec invested $217 million in energy efficiency initiatives.

TOMORROW

Researchers from IREQ will continue their efforts toward optimizing the use of electricity by future generations.

For more than 50 years, Hydro-Québec has been promoting the responsible use of resources.

In 2011, customer participation in EEP programs generated annual savings of 915 GWh. Thanks to the CAIVAR (voltage regulation and reactive power control) project and the Bureau de l'efficacité et de l'innovation énergétiques projects to which Hydro Québec contributes, total energy savings reached 995 GWh. Cumulative results totaled 6.2 TWh, which is 56% of the 11 TWh target for 2015.

ENERGY EFFICIENCY PLAN

Under the EEP, Hydro-Québec invested $1.4 billion between 2003 and 2011 to help its customers save energy. In 2011 alone, a total of $217 million was invested, including contributions to Bureau de l'efficacité et de l'innovation énergétiques projects.

2011 HIGHLIGHTS

RESIDENTIAL CUSTOMERS

- We launched our *Dare to Compare* service, which allows customers to compare their electricity consumption to that of households with a similar profile.

www.hydroquebec.com/residential/comparez-vous

- Over 462,500 conventional thermostats in rental properties were replaced with electronic thermostats. Over 90% of the components of the old thermostats are recycled.

www.hydroquebec.com/residential/thermostats

- The installation of 16,216 three-element water heaters will reduce power demand at peak periods.

www.hydroquebec.com/residential/chauffe-eau-trois-elements

- We renewed agreements for the Energy Efficiency Retrofit Program for Low-Income Households with eight municipalities and three partners in the social and community sector. In 2011, this program generated 9.1 GWh in energy savings.
- The Régie de l'énergie approved the Support Program for the Energy Optimization of Sustainable Urban Development Projects. These projects must meet criteria such as housing variety and density, use of public transit, promotion of active modes of transport and enhancement of the natural environment.

COMMERCIAL AND INSTITUTIONAL CUSTOMERS

- Savings of 151 GWh were achieved through the Buildings Program – Commercial and Institutional Customers, a 56% increase over 2010. A total of 7,014 projects had been submitted by the end of 2011. In order to serve all customers in this category, we added a new component for buildings less than 1,000 m² in area.

www.hydroquebec.com/business/efficiency/commercial/volet-prescriptif.html

- Savings of 45.2 GWh were achieved through the Lighting component of the Efficient Products Program.

- A new LED Public Lighting program was offered to Québec municipalities, the Ministère des Transports du Québec and the Government of Canada.

www.hydroquebec.com/business/efficiency/institutional/eclairage-public-del.html

- Savings through Hydro Québec's programs for Québec farmers totaled 8.5 GWh.

www.hydroquebec.com/business/efficiency/agricultural

INDUSTRIAL CUSTOMERS

- A new integrated energy efficiency service was offered and 372 projects were carried out, leading to savings of 431.1 GWh.
- Four new members were welcomed to the Energy Savers' Circle. This group now boasts 52 large organizations that have reduced their electricity consumption by at least 5% or 50 GWh per year.

www.hydroquebec.com/majorcustomers/ecolectrique.html

ENERGY EFFICIENCY OF HYDRO-QUÉBEC'S FACILITIES

Hydro-Québec implements energy efficiency measures in the design and operation of its equipment and buildings. Various initiatives are applied to reduce energy consumption and system losses, and to improve equipment energy performance.

The CATVAR project was approved by the Régie de l'énergie. Work on part of this project (deployment of measuring equipment and a voltage regulation system) began during the year. The CATVAR project is designed to improve the distribution system's energy performance through more precise voltage regulation. By 2015, it will yield annual savings of 2 TWh.

2011 HIGHLIGHTS

- We anticipate savings of 6.9 GWh from the three-year energy efficiency plan (2010–2012) for administrative buildings. The optimization of operating methods led to savings of close to 5 GWh.
- We saved 30 GWh through the CATVAR project with the control of four new substations (Saint-Maxime, Leclerc, Sorel and Vaudreuil-Soulanges).

RESULTS OF ENERGY EFFICIENCY INITIATIVES (GWh)

	OBJECTIVES				RESULTS			
	2008	2009	2010	**2011**	2008	2009	2010	**2011**
Residential customers	352	485	362	318	415	535	408	331[a]
Commercial, institutional and industrial customers	393	500	403	369	646	381	509	635
Energy savings[b]	745	985	766	688	1,061	916	917	965

a) Results include projects of the Québec government's Bureau de l'efficacité et de l'innovation énergétiques.

b) Overall total and sum of subtotals may differ due to rounding.

CUMULATIVE RESULTS OF CATVAR PROJECT (GWh)

	OBJECTIVES				RESULTS			
	2008	2009	2010	**2011**	2008	2009	2010	**2011**
CATVAR project	–	–	138	182	86	109	178	208

RESULTS OF ENERGY EFFICIENCY PROGRAMS

	RESULTS			
	2008	2009	2010	**2011**
Residential customers (ENERGY WISE products)				
Electronic thermostats (number)	824,391	722,734	580,685	814,646
Lighting – Compact fluorescent lightbulbs (number)	2,223,605	2,155,566	783,478	608,747
Residential customers (other)				
Home Diagnostic questionnaires (number)	93,438	151,222	105,800	143,410
Recovered energy-guzzling refrigerators and freezers (number)	66,493	119,669	104,523	59,243[a]
Geothermal energy (number of participants)	143	288	429	301
Commercial and institutional customers (number of projects submitted)				
Buildings Program	535	426	455	2,014[b]
Industrial customers (number of projects submitted)				
Industrial Systems Program	217	255	467	487
Plant Retrofit Program – PAMUGI	1	0	3	0

a) Due to the huge success of the program immediately following its launch, results largely surpassed objectives. As the program matures, results are more in line with target objectives.

b) Increase reflects the addition of a component for buildings less than 1,000 m² in area.

05 ENERGY PORTFOLIO

In the Baie-James region, the Robert-Bourassa underground powerhouse (5,616 MW) is the most powerful generating facility in Québec. The dam, spillway and reservoir here are among Hydro-Québec's most spectacular achievements.

YESTERDAY

In 2003 and 2005, Hydro-Québec issued two calls for the purchase of 3,000 MW of wind power. The year 2007 marked the beginning of the Eastmain-1-A/Sarcelle/Rupert project and 2009, the start of the Romaine project, with a total installed capacity of 2,468 MW.

TODAY

Renewable energies make up 97% of Hydro-Québec's energy portfolio. The development of hydropower continues with projects such as Eastmain-1-A/Sarcelle/Rupert and Romaine. All the projects related to the 2003 call for 1,000 MW of wind power are now completed.

TOMORROW

Commissioning of Eastmain-1-A and Sarcelle powerhouses will be completed in 2012, while Romaine-2 will be fully operational by 2014. In the next 25 years, the Québec government's Plan Nord will add 3,500 MW to Québec's energy portfolio.

To meet energy needs that remain after energy efficiency initiatives have been carried out, Hydro-Québec relies on an energy portfolio that includes the generation and purchase of renewable energies. According to a 2011 benchmarking exercise performed by the Utility Environmental Benchmarking Forum (sponsored by the Tennessee Valley Authority), Hydro-Québec ranked first in 2010, with a rating of 94%, among North American companies with the highest percentage of renewable energies generated and purchased. The average percentage of the 30 companies analyzed was less than 20%.

www.utilityenvironmentalfootprint.com

GENERATION FROM RENEWABLE ENERGIES

Québec enjoys abundant water resources: some 500,000 lakes and 4,500 rivers cover 12% of its surface area. On 75 of these rivers, Hydro-Québec operates 26 large reservoirs, 579 dams and 97 control structures. The company makes sure to preserve the water bodies' quality and share their use.

On top of the generation projects in progress or under study, Hydro-Québec is improving the efficiency of existing generating

NET ELECTRICITY GENERATED AND PURCHASED BY HYDRO QUÉBEC (GWh)

	2008	2009	2010	**2011**[a]
Hydropower generated	160,792	162,766	157,219	165,478
Hydropower purchased[b]	37,068	31,417	32,360	32,537
Biomass and waste reclamation power purchased	1,439	1,319	1,323	1,217
Wind power purchased[c]	810	1,131	1,419	1,531
Total renewables	**200,109**	**196,633**	**192,321**	**200,764**
Total energy generated	164,678	166,809	160,733	169,017
Total energy purchased	41,925	36,372	43,109	38,675
Total energy generated and purchased	**206,603**	**203,181**	**203,842**	**207,693**
Renewable energy/Total energy generated and purchased (%)	**97**	**97**	**94**	**97**

a) Total and sum of data may differ due to rounding.

b) Includes purchases from Churchill Falls (Labrador) Corporation and independent power producers, including McCormick generating station, in which Hydro-Québec holds a 60% interest.

c) Does not include wind energy purchases for which renewable energy certificates were sold to third parties.

Other generating options

Hydro-Québec's generating fleet includes 27 thermal generating stations and one nuclear power plant. Almost all the thermal generating stations (24 out of 27) are small facilities that supply communities connected to off-grid systems. Since Tracy generating station was shut down permanently on December 31, 2011, only three thermal power plants (Cadillac, Bécancour and La Citière) connected to the main grid are still operational, used mainly during winter peak. As for Gentilly-2 generating station, the only operational nuclear power plant in Québec, its operating licence was renewed until June 2016. The preparatory activities initiated in 2008 for the refurbishment of this power plant are continuing. The Québec government will make the final decision on whether this project will go ahead.

www.hydroquebec.com/gentilly-2/en

stations. Hydropower plants have a very long service life. The oldest generating station still in operation in Québec is Shawinigan-2, on the Rivière Saint-Maurice, which was inaugurated in 1911.

The Plan Nord announced by the Québec government will give the development of renewable energies a new boost. In addition to the projects included in its *Strategic Plan 2009-2013*, Hydro-Québec will build generation and transmission infrastructure to meet the energy and capacity needs of major industrial projects.

Several sites could lend themselves to the development of small and medium-sized hydropower plants, or even hydrokinetic turbines. It is also likely that these sites have complementary wind potential.

2011 HIGHLIGHTS

- Generating capacity increased by 512 MW as a result of the commissioning of two units at Eastmain-1-A powerhouse. The third unit (256 MW) was commissioned in January 2012.
- We added 175 km of lines to the transmission system, primarily for the integration of energy from new wind farms.
- Stator modeling for the AUPALE research project, which aims to increase the capacity of generators without decreasing their service life, was completed. A potential of 350 MW was determined.

WATER BODY MANAGEMENT

Hydro-Québec encourages multipurpose use of its properties by third parties as long as operations, safety and profitability are not compromised.

In addition, the company is in communication with various local organizations, specifically regarding instream flows, flood management, interbasin management and water usage.

2011 HIGHLIGHTS

- Soucis dam in the Saint-Maurice wildlife reserve was dismantled to restore the natural appearance of the stream.
- We modified the water management of the reservoir at Manouane-B dam in Mauricie to facilitate the activities of the Kanawata outfitter.

Connecting wind farms

In Haute-Gaspésie, the 106-km line linking Mont-Louis and Gros-Morne wind farms to Goémon substation (230 kV) crosses seven valleys where winter weather conditions are particularly conducive to icing. The exceptional length of the line spans (from 1,100 to 1,700 m) and the type of soil required a number of innovations: four tower designs able to withstand heavy ice loading; a surge arrester with an external spark gap rather than a conventional overhead ground wire; two types of high-strength conductors; and a column foundation, which is better suited to shale soil. The project was a success from every standpoint.

Les sociétés des entreprises innues d'Ekuanitshit was created under the *Nishipiminan Agreement 2009* to manage the contracts awarded by Hydro-Québec. Our mission is to create jobs for Innus, either directly or through subcontractors. We also help interested members start up companies to carry out certain contracts. In the Romaine project, we are involved in seven areas: cafeteria and janitorial services, buildings and maintenance, environment, construction and civil engineering, forestry, security and transportation.

Moreover, we are in charge of worker training in partnership with Hydro-Québec. For example, a training component was added to the first land clearing contract for the Romaine-2–Arnaud transmission line.

Basically, we execute contracts while maximizing jobs and economic spinoffs for the community. We also strive to increase our local expertise, ensuring prosperity for our communities beyond the project.

YVES BERNIER

Director

Les sociétés des entreprises innues d'Ekuanitshit

PURCHASE OF RENEWABLE ENERGIES

Hydro-Québec Distribution's supply strategy is based on a flexible and diversified energy portfolio that guarantees a reliable supply of electricity at the best possible cost. Beyond the heritage pool, supply is ensured primarily through hydropower purchases from Hydro-Québec Production and wind power and biomass purchases from various independent power producers.

www.hydroquebec.com/distribution/en/marchequebecois/pae-200901

Since January 2006, the Régie de l'énergie allows the application of rate provisions for customers who generate their own electricity. These customers pay the difference between energy consumed and energy generated, in addition to the fixed charge for their rate.

www.hydroquebec.com/self-generation

2011 HIGHLIGHTS

- Deliveries began from Mont-Louis and Montagne-Sèche wind farms, and from the Phase 1 turbines at Gros-Morne wind farm, in Gaspésie. This marks the conclusion of all the projects related to the 2003 call for 1,000 MW of wind power, and brings the installed capacity contracted to 706.5 MW.

In 2011, the output from Mont-Louis wind farm in Gaspésie was added to Hydro-Québec's energy portfolio, 97% of which consists of renewable energies.

- We connected Le Plateau wind farm, in Gaspésie, and broke ground on the 315-kV line that will connect Lac Alfred wind farm, in Bas-Saint-Laurent. These projects followed the 2005 call for 2,000 MW of wind power.
- The Régie de l'énergie approved 12 contracts totaling 291 MW for the supply of two 250-MW blocks of wind power generated in Québec, in response to tender calls issued in 2009. One block is reserved for Aboriginal projects and the other for community initiatives.
- A power purchase program targeting small hydro (50 MW or less) was launched in 2009: 5 of the 13 projects (totaling 149.7 MW) are under contract, 6 are awaiting signing and 2 have been abandoned. In March, two hydropower plants with a total capacity of 13.3 MW began delivery.

Acquisition of wind power

WIND FARM	PROPONENT	NUMBER OF WIND FARMS	CAPACITY (MW)	INITIAL CONNECTION
Baie-des-Sables	Cartier Wind Energy	73	109.5	2006
L'Anse-à-Valleau	Cartier Wind Energy	67	100.5	2007
Carleton	Cartier Wind Energy	73	109.5	2008
Saint-Ulric – Saint-Léandre	Northland Power	100	127.5 22.5 (projected)	2009
Mont-Louis	Northland Power	67	100.5	2011
Gros-Morne	Cartier Wind Energy	141	100.5 111.0 (projected)	2011
Montagne-Sèche	Cartier Wind Energy	39	58.5	2011
Le Plateau	Invenergy	60	138.6	2012

2003

- *First tender call (1,000 MW)*

2005

- *Contracts signed with independent power producers for a first block of 990 MW*
- *Second tender call (2,000 MW)*

2008

- *Contracts signed with independent power producers for a second block of 2,005 MW*

2009

- *Tender calls for two 250-MW blocks, one reserved for Aboriginal projects and the other for community projects*

2011

- *Contracts signed for the two 250-MW blocks*

- We launched a program to purchase 150 MW of electricity produced by forest biomass cogeneration in Québec.
- To balance energy supply and demand, the Régie de l'énergie approved the suspension of 2012 deliveries from the thermal generating station in Bécancour (TransCanada Energy). Suspending deliveries is less costly and less risky than reselling the surplus on short-term markets.

ENVIRONMENTAL IMPACT MANAGEMENT

All electricity generation methods have environmental impacts. Hydro-Québec practises careful environmental management to limit the impacts of its operations on the environment. The company can count on its ISO 14001–certified management systems.

BIODIVERSITY

Hydro-Québec's specialists collaborate with eight at-risk species recovery teams set up by government authorities. The work of these teams contributes to the protection of 16 threatened or endangered animal species in Québec.

2011 HIGHLIGHTS

- We adopted a new strategy to take biodiversity and ecological services into greater consideration.
- Over 65,000 eels migrated through the fish passes at Beauharnois generating station.
- An ultrasonic barrier was successfully used to lead American shad away from Rivière-des-Prairies generating station and toward the spillway.
- Environmental follow-up on the Chénier Outaouais line: three years after construction, the land clearing seems to have had no impact on two rare plant species (downy rattlesnake plantain and ebony spleenwort).

REDUCTION, RECOVERY, REUSE AND RECLAMATION

The ISO 14001–certified management systems, which help improve the company's environmental performance, include standards for the use and recovery of materials.

The bald eagle, a species at risk. Hydro-Québec contributes to the work of a multidisciplinary team whose aim is to halt the decline of this raptor and prevent its disappearance.

AT-RISK SPECIES RECOVERY TEAMS

GROUP	RECOVERY TEAM IN WHICH HYDRO-QUÉBEC PARTICIPATES
Fish	■ Striped bass ■ Minnows and small perch: channel darter, eastern sand darter, bridle shiner, grass pickerel ■ American shad
Amphibians and reptiles	■ Western chorus frog ■ Blanding's turtle, common musk turtle, common map turtle, wood turtle
Birds	■ Birds of prey: bald eagle, golden eagle, peregrine falcon
Mammals	■ Forest-dwelling woodland caribou ■ Freshwater seals

PROCUREMENT, RECOVERY, REUSE AND RECYCLING OF RESIDUAL MATERIALS – SOME STATISTICS

	2011		
	PROCUREMENT	RECOVERY	NOTES
Power-line hardware (tonnes)	not available	449	Most power-line hardware is given to a business and recycling training centre (CFER). Parts in good condition are re-milled and reused. Damaged parts are recycled.
Printer cartridges and accessories (units)	22,177	29,499	Recycled cartridges purchased: 12%.
Computer equipment ■ Purchased (units)[a] ■ Computers (units)	6,499 not applicable	not applicable 6,790	Computer and electronic equipment is collected by a company that employs people with functional difficulties. After data is erased, equipment that still has value is sold or given to charities. Obsolete and damaged equipment is dismantled and recycled.
Wooden pallets (units)	not available	20,767	Close to 40% of recovered pallets will be reused. The others are recycled for use in animal bedding and acoustic tiles.
Paper and paperboard (tonnes)	401	1,221	Purchases were for paper only. They have decreased by 6% compared to 2010.
Porcelain (transmission line insulators) (tonnes)	not available	177	A new porcelain insulator recovery program is available in a number of areas.
Clothing (kg)	not available	3,309	Collection is handled by two CFERs. After clothes are cleaned and the Hydro-Québec logos removed, clothing that still has value is repaired and reused. All other clothes are recycled.

a) Computer equipment includes desktop, laptop and workstation computers and monitors.

In the Minganie region, construction work at the Romaine-2 (640 MW) jobsite is progressing at a good pace. The facility will start generating electricity by 2014. Environmental follow-up will continue until 2040.

Inventory of beaver colonies. One of the mitigation measures: relocation of beavers in the summer.

Romaine project

Status: under construction

Cost: $6.5 billion

Region: Côte-Nord

Construction: 2009–2020

Installed capacity: 1,550 MW

Planned annual output: 8.0 TWh

Total economic spinoffs: $3.5 billion for Québec as a whole, including $1.3 billion for Côte-Nord

Hydro-Québec Production unit cost: 6.4¢/kWh (including transmission system)

Complete project fact sheet: www.hydroquebec.com/romaine (in French only)

Construction on the Romaine complex got under way, following completion of the extensive environmental impact assessment that lasted four years. The competent authorities concluded that the project's mitigation, compensation and monitoring measures will limit the main negative effects on the environment. Environmental follow-up will continue until 2040, allowing us to monitor environmental changes, determine the effectiveness of mitigation and compensation measures, and make any necessary adjustments. ISO 14001–certified environmental management systems and OHSAS 18001–certified health and safety management systems govern jobsite activities.

EXAMPLES OF ACTIVITIES IN 2011

FOCUS	ACTIVITIES
Mitigation measures	
Access to the area by local communities	▪ 32 km of the jobsite access road were opened and parking areas were developed. ▪ Boat ramps were built.
Protection of small wildlife	▪ Shelters made of wood debris were built and food was deposited around the future Romaine 2 reservoir.
Inventory of beaver colonies along the Route de la Romaine	▪ Beavers were relocated during the summer. ▪ Beaver trapping was done with Innu collaboration and game was distributed in the community of Ekuanitshit in the fall.
Environmental follow-up	
Assessment of social impacts	▪ Innu workers were surveyed to determine the socioeconomic effects of their participation in the jobsite over several years.
Changes in traffic on Route 138	▪ We evaluated the changes in traffic related to construction activities. ▪ A simulation of the noise on Route 138 was based on the number of vehicles traveling to and from the jobsite.
Baseline of the Atlantic salmon population	▪ Redd counts confirmed that the population identified during the impact assessment is at risk. Government authorities prohibit salmon fishing in the Romaine.
Partnership with the community	
Ongoing exchanges with Innu communities	▪ Agreements with Innu communities were monitored through Hydro-Québec Innu joint ventures. ▪ Meetings of the Romaine technical and environmental committees (CTER) yielded the 2010 report on environmental follow-up activities and a report on follow-up studies from previous years. ▪ A society dedicated to restoring the Romaine salmon population was established. ▪ A newsletter called *Nui Uapaten* (*I want to see*, in English) and aimed at the four Innu communities affected by the jobsite's activities began publication.
Ongoing public information	▪ We published bulletins to inform the Minganmunity on construction activities and environmental follow-up studies. ▪ Meetings of community relations committees gathered concerns from regional (Côte-Nord and Minganie) interest groups and reported on 2010 environmental follow-up activities. ▪ Summer jobsite visits were provided.

Female caribou were fitted with radio collars, which will provide information on their behavior and land use. Monitoring of forest-dwelling woodland caribou will continue until 2025.

Julie Mollen, from the Innu community of Ekuanitshit, gathers medicinal plants before the impoundment of Romaine 1 reservoir—yet another environmental measure.

Expansion of the transmission system in Minganie: Connecting the Romaine complex

Status: under construction

Cost: $1.2 billion

Construction: 2011–2020

Complete project fact sheet: www.hydroquebec.com/projets/romaine_transport (in French only)

The project calls for construction of 496 km of 735-kV lines and four substations, as well as changes to Arnaud and Montagnais substations. Various mitigation measures are planned: tower distribution that avoids wetlands, preservation of vegetation in sensitive areas, etc. Environmental follow-up studies will be carried out on forest-dwelling woodland caribou and land use by local communities, among other subjects.

2011 HIGHLIGHTS

- The order in council authorizing the project was obtained in August.
- Total annual expenditure: $44.6 million.
- Contracts awarded in the region: $21 million.
- Land clearing was done and construction began on the Romaine 2–Arnaud line.
- Earthwork was carried out at Rivière-au-Tonnerre workcamp (250 workers).

Since 2004, the project characteristics and results of the environmental studies have been presented to the Minganand Innu communities. The communities of Ekuanitshit, Nutashkuan, Unamen Shipu and Pakua Shipi participated in the studies on the Innu environment.

PROGRESS IN 2011

Romaine-1 generating station

- Geological and geotechnical investigations were completed.

Romaine-2 generating station

- We finished building a 38-km stretch of the Route de la Romaine (160 km), for a total of 86 km to date.
- Murailles workcamp (2,000 workers) was completed.
- Progress was made on excavation for the spillway, intake, headrace tunnel and powerhouse.
- Construction of the dam began.
- We started work on backfilling and laying asphalt concrete for the dam and dikes.

Romaine-3 generating station

- Geological and geotechnical investigations are under way.
- We built a workcamp at kilometre 84 of the Route de la Romaine.
- We planned the route of a 14-km section of the road (up to kilometre 99).

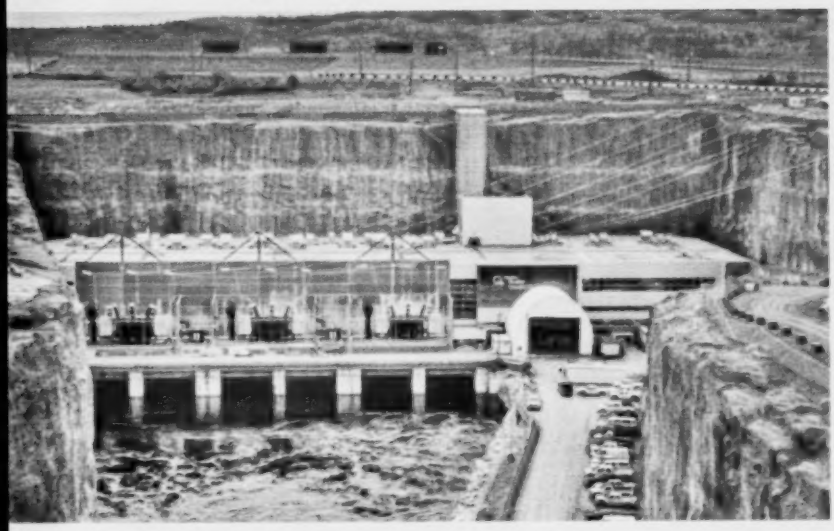
Romaine-4 generating station

- Preliminary work continued, including a study for the relocation of two populations of Arctic char present in the area of the future Romaine-4 reservoir.

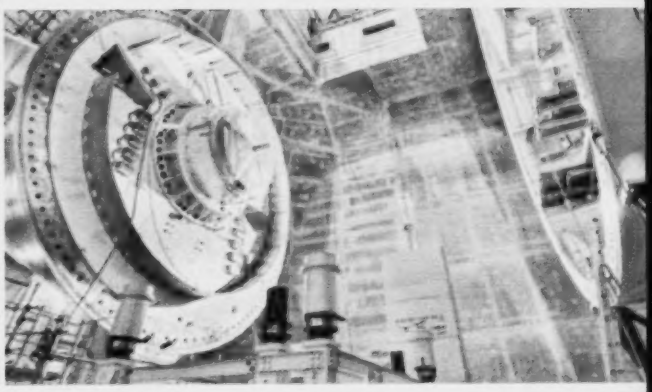
2011 HIGHLIGHTS

- Jobs created: 1,198 person-years, with Côte-Nord and Innu workers accounting for 50% of the workforce.
- Annual investment (not including financing): $493 million.
- Contracts awarded in the region: $69 million.
- We obtained 110 sector-specific government approvals, for a total of 238 to date. We received seven legal non-compliance notices for which corrective measures were implemented or are being implemented.
- 46.9 tonnes of food waste and 23.7 tonnes of cardboard were composted at Murailles workcamp. The compost will be used in restoring the workcamp sites.
- The regional economic spinoffs committee held 11 meetings with Côte-Nord economic players, including the Innu and Mingancommunities that have signed agreements. These discussions gave rise to the development of a business practices guide for major projects in resource regions and the implementation of an action plan to mobilize the region's businesspeople, which included fairs, tours and improvement of the supply plans for the Romaine complex.

In the Baie-James region, Eastmain-1-A powerhouse (768 MW) has been fully operational since January 2012. The environmental follow-up will continue until 2023.



A hub cover was installed in the bulb-unit shaft at Sarcelle powerhouse in Baie-James. An ISO 14001–certified environmental management system governs jobsite operations.



Eastmain-1-A/Sarcelle/ Rupert project

Status: under construction

Cost: $5.0 billion

Region: Nord-du-Québec

Construction: 2007–2012

Installed capacity: 918 MW

Planned annual output: 8.7 TWh

Total economic spinoffs: $2.9 billion for Québec as a whole, including $640 million for Nord-du-Québec

Hydro-Québec Production unit cost: 5.0¢/kWh (including transmission system)

Complete project fact sheet: www.hydroquebec.com/rupert/en

The result of numerous consultations with stakeholders, the Eastmain-1-A/Sarcelle/Rupert project includes construction of Eastmain-1-A and Sarcelle powerhouses and the partial diversion of the Rivière Rupert to these powerhouses, then north to the La Grande complex. The project's distinguishing features are the scale of the environmental preservation measures and the measures that take community concerns into account. An ISO 14001–certified environmental management system governs jobsite operations.

EXAMPLES OF ACTIVITIES IN 2011

FOCUS	ACTIVITIES
Mitigation measures	
Site rehabilitation and enhancement	▪ 300 ha were seeded, including 43 ha to support goose hunting. ▪ Infrastructures were developed for commemorative sites. ▪ 1,620,000 seedlings were planted by tallymen to restore jobsites.
Preservation of fishing activities	▪ Lake sturgeon: 88,600 larvae and 17,800 young-of-the-year were stocked. ▪ Anadromous lake cisco: two pools and boardwalks were built at Smokey Hill rapids for traditional Cree dip-net fishing.
Access to the area	▪ The tallymen built ATV and snowmobile trails and access roads. ▪ 34 portages along the Rivière Rupert were improved. ▪ 288 signs were erected by the tallymen and maps were distributed to facilitate navigation. ▪ Four boat ramps were built.
Environmental follow-up	
Anadromous lake cisco in the Rivière Rupert	▪ During the larvae drift downstream of Smokey Hill rapids, 3.7 million larvae were counted, compared to 7.3 million in 2010, 8.4 million in 2009 and 1.9 million in 2008. The 2011 drift reflects spawning under reduced flow conditions. ▪ The 2011 follow-up results indicate that the main concentration areas are in the same locations as under natural conditions—downstream from rapids—but are more scattered and farther from the bank.
Lake sturgeon spawning and larvae drift	▪ The overall number of lake sturgeon larvae was higher than under natural conditions at all three sites studied.
Riparian and aquatic vegetation	▪ The post-diversion baseline was established for riparian vegetation in various areas: Baie de Rupert, Rupert estuary, the reduced flow stretch of the Rivière Rupert, Rupert forebay and tailbay.

A lake sturgeon hatchery produces fish for stocking. One of the environmental measures involves releasing larvae and young fish into the Rupert and Nemiscau rivers and Rupert forebay.

Tallyman Walter Jolly, from the Nemaska Cree community, obtained a contract to plant shrubs near Rupert dam and spillway.

Red-tailed hawk, a species inventoried during the environmental follow-up.

EXAMPLES OF ACTIVITIES IN 2011	
FOCUS	**ACTIVITIES**
Environmental follow-up (continued)	
Changes in raptor breeding populations	▪ Breeding pairs of raptors were inventoried to describe their use of the diversion bays and the reduced flow section during nesting. Result: osprey, bald eagles, red-tailed hawks and northern harriers were more abundant than in 2002.
Deforestation by natural agents and wood debris in the diversion bays	▪ Second follow-up year for deforestation by natural agents (ice, waves and wind). Deforestation is very slow because water level fluctuations are small and wood debris is very scarce. The tallymen agreed that no wood debris should be collected in 2011 as the navigation corridors were quite clear and well marked. Structure safety and efficiency were not compromised.
Navigation conditions in the increased-flow section	▪ Users reported that because of the currents and frequent high winds, it is difficult to navigate on the Rivière Eastmain, Opinaca reservoir and Boyd and Sakami lakes. A map of navigation corridors in the increased-flow section will be produced to facilitate navigation.
Landscape	▪ The Rupert landscape follow-up is the first that Hydro-Québec has undertaken on such a large scale on a river; the objective is to report on the impact of the flow reduction caused by partial diversion of the river.
Partnerships with the community	
Ongoing exchanges with Cree communities	▪ A Monitoring Committee ensures that Crees are involved in the design and execution of the environmental follow-up program. ▪ A joint committee was created to oversee measures to maintain traditional dip-net fishing conditions for anadromous lake cisco. ▪ Hydro-Québec participated in various radio broadcasts on Cree regional radio. www.hydroquebec.com/hydloandfriends

PROGRESS IN 2011

Eastmain-1-A powerhouse

- Two generating units were commissioned, followed by the last in January 2012.
- The substation went into operation.

Sarcelle powerhouse

- Assembly of the first bulb-type unit was finished.
- The mechanical, electrical and architectural work and heating, ventilation and air conditioning system installation in the powerhouse are now over 95% complete.
- The tailrace canal was impounded.

2011 HIGHLIGHTS

- Jobs created: 1,463 person-years; Cree and Jamesian workers accounted for 10.6% of the workforce.
- Annual investments (not including financing): $275 million.
- Of the 1,300 government approvals obtained for the project, 48 were acquired in 2011. Six legal non-compliance notices were received and corrective measures have been implemented.
- A Networking Day was held on the Eastmain-1-A and Sarcelle jobsites for companies in Nord-du-Québec and Abitibi-Témiscamingue. Many business opportunities were explored with contractors.

At Bout-de-l'Île substation in Montréal, various mitigation measures will be applied: measures for plants and animals in a line right-of-way, landscaping and installation of sound barriers.

Construction of Limoilou substation in the city of Quebec. Mitigation measures include installation of some equipment inside a building.

Development of the transmission system in the northeast Montréal metropolitan region

Status: awaiting government authorizations

Cost: $671 million

Regions: Montréal and Lanaudière

Construction: 2012–2015

Voltage:

- 315-kV Mauricie–Lanaudière line
- 735/315/120-kV Bout-de-l'Île substation
- 315/25-kV Lachenaie substation
- 315/120-kV Pierre-Le Gardeur substation
- 315/120/25-kV Bélanger substation and 315-kV tap line

Complete project fact sheet:
www.hydroquebec.com/projects/evolution-nord-est-metropolitain.html

A number of transmission system lines and substations are overloaded and the capacity of others will be exceeded in the near future. To meet power demand in an optimal manner, a plan was adopted to develop the transmission system in northeast metropolitan Montréal. The plan has four parts:

- construction of a line between the Mauricie and Lanaudière regions
- expansion of Bout-de-l'Île substation and connection to the grid
- construction of two new substations in Terrebonne—Lachenaie and Pierre-Le Gardeur
- construction, on the existing site, of an indoor substation to replace Bélanger substation and of a tap line.

PLANNED MITIGATION MEASURES

- Programs are being developed with area administrators to compensate for lost wetlands and vegetation.
- Measures will be implemented for plants and animals in a line right-of-way at Bout-de-l'Île substation.
- Quieter transformers will be installed at the future indoor Bélanger substation and sound barriers placed around Bout-de-l'Île substation.
- Lachenaie, Bout-de-l'Île and Bélanger substations will be landscaped.
- New towers will be placed alongside an existing line and some vegetation screens will be preserved along the Mauricie–Lanaudière line.

2011 HIGHLIGHTS

- A hearing was held by the Bureau d'audiences publiques sur l'environnement, the final step before obtaining government approvals.

Limoilou substation

Status: under construction

Cost: $71.9 million

Region: Capitale-Nationale

Construction: 2011–2012

Voltage: 230/25 kV

Complete project fact sheet:
www.hydroquebec.com/projects/limoilou.html

De la Reine and Montcalm substations have become obsolete; construction of Limoilou substation is therefore necessary to meet growing demand in metropolitan Québec.

PLANNED MITIGATION MEASURES

- Equipment (25-kV section) will be installed inside a substation building.
- Siding will be put up for architectural enhancement on some sides of the substation.
- Trees will be planted in front of the substation and will be visible from Chemin de la Canardière, which runs through Vieux-Limoilou.

2011 HIGHLIGHTS

- Remains of old buildings and artifacts dating from the first half of the 19th century were unearthed.
- Government approvals were obtained and construction started.

Environmental follow-up on developments in operation is designed to measure the real impact of projects and the effectiveness of the mitigation and compensation measures. The lessons learned will be used to improve environmental assessment procedures for other projects.

Péribonka development in Saguenay–Lac-Saint-Jean.

Rapides-des-Cœurs development in Mauricie.

Péribonka development

Status: in operation since 2008
Cost: $1.4 billion
Region: Saguenay–Lac-Saint-Jean
Installed capacity: 405 MW
Annual output: 2.2 TWh
Environmental follow-up: 2008–2018

MAIN CONCLUSIONS OF THE ENVIRONMENTAL FOLLOW-UP

Water quality

- The parameters analyzed meet the Québec government's water consumption requirements.

Lake trout enhancement

- Since 2007, the reservoir has been stocked with 315,000 juvenile lake trout.

Waterfowl, herons and raptors

- Waterfowl breeding has increased, except for the common merganser.
- The reservoir is frequented by twice as many waterfowl broods as in 2008.
- There is no sign that the osprey platform has been used. The great blue heron appears to have abandoned the heronry discovered in 2002.

Chute-Allard and Rapides-des-Cœurs developments

Status: in operation since 2008 and 2009
Cost: $1.0 billion
Region: Mauricie
Installed capacity: 138 MW
Annual output: 0.9 TWh
Environmental follow-up: 2010–2018

According to the 2010 follow-up on economic spinoffs, operation of these generating stations adds a value of $9.7 million to the Québec economy, including $7.1 million for the regional economy. These effects are permanent and recurring.

MAIN CONCLUSIONS OF THE ENVIRONMENTAL FOLLOW-UP

Fish communities in the diversion bays

- Abundance of yellow perch increased in both forebays, relative abundance of fallfish decreased and relative abundance of white and longnose suckers increased in the Rapides des Cœurs forebay. The flooding appears to have benefited walleye.

Walleye and brook trout in creeks

- Walleye eggs were observed over an area of 124,500 m² in Rapides de la Graisse and in the Petite rivière Flamand.
- Walleye use 69% of the area of the developed spawning grounds and suckers use 76%.
- The relative abundance of brook trout varies in the tributaries, but overall it remains similar to the baseline abundance.

Waterfowl and raptors

- A total of 368 birds belonging to 11 species of waterfowl were observed and 58 broods were inventoried.
- None of the three platforms built for bald eagles have been used by the species, but they were used by osprey in 2011.
- The nest box occupation rate rose from 12% in 2010 to 32% in 2011.

Outfitting, sport fishing at Rapides des Cœurs and navigation on the Rivière Saint-Maurice

- Fishing effort and the number of hunters have dropped despite good road conditions since Highway 25 was rebuilt by Hydro-Québec.

06 PROJECT ACCEPTABILITY AND SPINOFFS

Déboisement Shakau General Manager Jean-Pierre Basile (front) and some employees. This Innu company in the Lac-Saint-Jean region provides expert vegetation control in transmission line rights-of-way.

YESTERDAY

In the late 1990s, Hydro-Québec set three fundamental criteria for projects: they must be profitable, environmentally acceptable and favorably received by the host community. These conditions reflect the principles of sustainable development.

TODAY

Through public participation and partnerships with stakeholders, communities are involved in project planning, and are consequently more receptive to the developments. The Eastmain-1-A/Sarcelle/Rupert and Romaine projects are good examples.

TOMORROW

In an age of instant communication and an ever changing social environment, Hydro-Québec will maintain its practice of beginning to consult stakeholders in the design phase to ensure that future projects receive community support.

PUBLIC PARTICIPATION

Before embarking on a generation or transmission project, Hydro-Québec deploys a public participation process that takes the host community's concerns and expectations into consideration. This process ensures that projects blend in with their environment and enhances their acceptance by the community.

The public participation approach is developed by project teams, who work with community relations specialists in each region. The goals are to provide an understanding of the project, respond to stakeholders' information needs and gather community concerns regarding the project. We communicate with representatives of various levels of government, the property owners concerned, citizens, Aboriginal communities, community organizations, contractors, suppliers and local media.

These consultations with stakeholders are helpful in determining the project variant that will have the least social, environmental, technological and economic impact. The discussions also mean that project development can respond better to host community needs and expectations.

2011 HIGHLIGHTS

- Dozens of information and consultation meetings were held for generation and transmission projects.
- 35 specialists were involved in carrying out the public participation process.
- Nearly 50 project information bulletins were circulated to report on progress and line route changes.

www.hydroquebec.com/projects

RELATIONS WITH ABORIGINAL COMMUNITIES

Québec's 11 Aboriginal nations account for about 1% of its population and live in 55 communities, including 14 northern villages.[1]

Since 1975, Hydro-Québec has signed some thirty agreements with Aboriginal nations or communities relating to development projects. Under these agreements, Aboriginal communities have participated in all project phases from design to operation, have assisted with environmental follow-ups and have benefited from economic spinoffs. The Nanemessu Natashquan and Unamen Pakua agreements were signed in 2008. In 2009, the company signed the *Nishipiminan Agreement* with the Mingan Innu community regarding construction of the Romaine complex.

www.hydroquebec.com/romaine/environnement/acceptation.html (in French only)

1. www.saa.gouv.qc.ca/relations_autochtones/profils_nations/profil_en.htm

PUBLIC PARTICIPATION IN A MAJOR PROJECT

	PLANNING	DRAFT DESIGN AND PERMITTING	CONSTRUCTION	OPERATION
GENERATION	▪ Preliminary discussions with regional county municipalities and Aboriginal communities with a view to signing agreements ▪ Identification of basic expectations and issues ▪ Duration: 1 to 2 years	▪ Information and discussion panels ▪ Continuous communications (open house events, information meetings, media relations, etc.) ▪ Public consultation by government authorities ▪ Duration: 2 to 5 years	▪ Economic spinoffs committee ▪ Environmental and agreement monitoring committees ▪ Public information on work progress (bulletins, press releases, etc.) ▪ Duration: varies, 2 to 12 years	▪ Environmental and agreement monitoring committees ▪ Follow-up duration: varies, exceeds 20 years for the Romaine project
TRANSMISSION	▪ Evaluation of the relevance of consulting host communities when environmental issues are unknown ▪ Duration: 1 to 2 years	▪ Three communication phases implemented by project teams: ▪ general information ▪ public consultation ▪ information on solution selected ▪ Various types of communication (open house events, information meetings, media relations, etc.) ▪ Public consultation by government authorities ▪ Duration: 2 to 5 years	▪ Public information on project progress (bulletins, press releases, Info-projet line, etc.) ▪ Duration: 1 to 5 years	▪ As needed, written information on results of environmental follow-ups ▪ Follow-up duration: varies, 7 years for the Des Cantons–Lévis–Appalaches project

2011 HIGHLIGHTS

- Four new permanent Cree employees were hired, bringing the total number of Crees working for Hydro-Québec in the Baie-James region to 48.
- Hydro-Québec purchased $103.7 million in goods and services from Aboriginal companies, organizations and independent workers. For Société d'énergie de la Baie James, the volume of activity was $50.8 million.
- 88 employees participated in an in-house training program where they learned about Aboriginal nations and communities, and Hydro-Québec's business relations with them.
- In Chibougamau, Hydro-Québec supported a new college program on natural environment technology. The program was designed by the Cégep de Saint-Félicien and nine students, mostly Crees, were registered in it last fall.

PROJECT SPINOFFS

In Québec, the value added in 2011 by the power generation, transmission and distribution industry amounted to $12.7 billion.[2] Since Hydro-Québec accounts for about 95% of this industry, its contribution to the province's economy, excluding its construction, R&D and subsidiaries' operations, equals approximately 4% of the gross domestic product. A report is available on the impact of Hydro-Québec's activities in each of the 17 administrative regions in Québec.

www.hydroquebec.com/publications/en/profil_regional

Hydro-Québec uses various mechanisms to maximize the regional economic spinoffs of its projects. Contract clauses promote local subcontracting. Tender calls for contracts under $1 million are reserved for local companies in a spirit of healthy competition. Regional economic spinoff committees are set up to enable local economic organizations to obtain information about tender calls and project spinoffs, and to follow up on environmental measures.

2011 HIGHLIGHTS

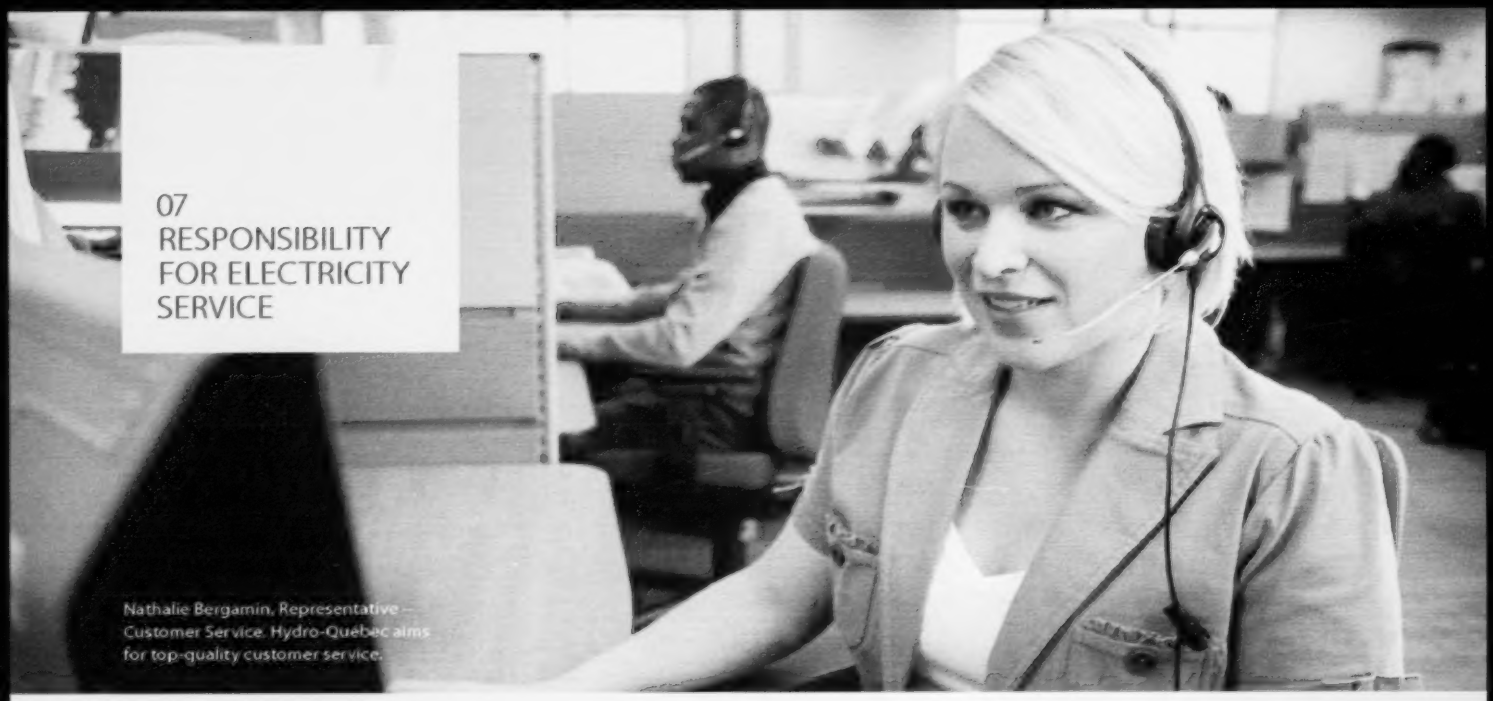
- Procurement of goods and services inside and outside Québec totaled $2,913 million ($2,998 million in 2010):
  - purchase of goods: $1,180 million
  - rentals and leasing: $27 million
  - specialized services and other work: $1,267 million
  - professional services: $439 million.
- Procurement of goods and services from Québec businesses was $2,695 million (92.5% of the total).

2. Hydro-Québec and Institut de la statistique du Québec.

EXAMPLES OF PUBLIC PARTICIPATION – 2011

PROJECT	STATUS	ACHIEVEMENT
Substation north of Blainville (315/25 kV) and tap line (Laurentides)	Awaiting government authorizations	Consultations led Hydro-Québec to change the substation location and suggest low-profile towers to meet the needs of the city of Blainville and stakeholders.
Transmission system expansion in Minganie (Côte-Nord)	Under construction	Following receipt of the government authorizations, Hydro-Québec met with elected officials, representatives of a number of community groups, resort owners and citizens. Communication aids were developed in cooperation with the municipality of Rivière-au-Tonnerre to inform residents of the impact of the presence in their area of a workcamp for 250 workers from 2012 to 2014. Corrective measures were also added to the project to prevent closure of the Trans-Québec 3 snowmobile trail during construction.
Tie line for Lac Alfred wind farm (Bas-Saint-Laurent)	Under construction	After consulting the community, we took steps to maximize local economic spinoffs. Twice, forest contractors in the regional county municipality (RCM) of La Matapédia were invited to participate in selective tendering. Five contractors obtained clearing contracts.

07 RESPONSIBILITY FOR ELECTRICITY SERVICE



Nathalie Bergamin, Representative – Customer Service. Hydro-Québec aims for top-quality customer service.

YESTERDAY

In the early 2000s, a major effort was made to secure service continuity and reliability, as well as the long-term operability and performance of the transmission system. With regard to reliability, Hydro-Québec ensures that the system meets the requirements of such bodies as the North American Electric Reliability Corporation (NERC) and the Northeast Power Coordinating Council (NPCC).

TODAY

In 2011, Hydro-Québec spent $1.3 billion on the development, reliability and long-term operability of its transmission facilities. We are working to upgrade the distribution system in order to improve service quality and efficiency.

TOMORROW

Capital investment in development and long-term operability of the transmission system will continue. Under the distribution automation program, over 3,000 remotely controlled units will be installed.

RELIABLE ELECTRICITY SERVICE

To evaluate system reliability, power utilities use the system average interruption duration index (SAIDI), which measures the average duration of service interruptions per customer. In accordance with the system development plan adopted in 2009, Hydro-Québec continually strives to improve service reliability.

2011 HIGHLIGHTS

- We invested $1.3 billion in expanding our transmission system and ensuring its reliability and long-term operability. This investment effort is intended to meet various needs: native-load growth, integration of new wind power and hydropower output, refurbishment and modernization of assets, and compliance with standards and regulatory requirements.
- Our investment of $733 million in distribution system development, reliability and long-term operability focused mainly on the technological evolution of the system and the efficiency of business processes.

E-business

About 14% of Hydro-Québec's bills are sent electronically to customers who have opted for online billing. This responsible choice means that 4.5 million bills per year are not printed by Hydro-Québec.

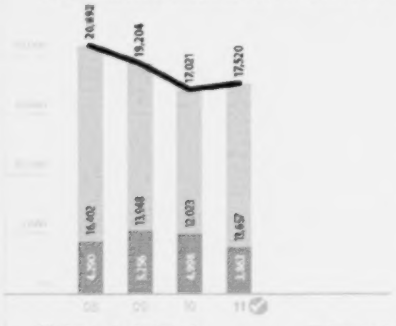
SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI)

	2008	2009	2010	**2011**
SAIDI – Hydro-Québec (hours/customer)	2.78	2.74	2.70	**2.96**
SAIDI – North American average according to IEEE (hours/customer)	2.58	1.93	2.13	**not available**

The system average interruption duration index (SAIDI) is one of the performance indicators standardized in IEEE (Institute of Electrical and Electronics Engineers) Standard 1366. It includes interruptions of more than five minutes that occur on generation, transmission and distribution systems. About one hundred North American companies participate in IEEE's annual benchmarking survey. The average shown is the median published in the analysis report. System size, density and architecture, as well as the number and length of lines, are some of the factors that influence the value of the index.

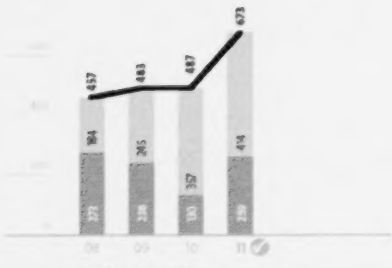
Jonathan Belle-Isle, Advisor – Environment, performs vegetation control, which is governed by an ISO 14001–certified environmental management system.

VEGETATION CONTROL ALONG TRANSMISSION LINE RIGHTS-OF-WAY (ha)



The area of transmission line rights-of-way to be maintained is 174,387 ha, up 4% from 2010.

VEGETATION CONTROL ON DIKES AND DAMS (ha)



Larger areas were treated in 2011 because of the approaching end of the five-year vegetation control plans for dikes and dams.

VEGETATION CONTROL

To ensure that its facilities are reliable and safe, Hydro-Québec must control the vegetation in its rights-of-way. For the distribution system, various committees see that the necessary tools and mechanisms are set up to deal with environmental considerations. For the transmission system and generating facilities, the company's procedure promotes the use of the right treatment in the right place at the right time.

www.hydroquebec.com/vegetation-safety

2011 HIGHLIGHTS

- Herbicides were used in distribution system maintenance to treat 1,077 spans in heavily wooded areas with low population density.

MEASURING CONSUMPTION

Half of Hydro-Québec's electricity meters are nearing the end of their service life. Subject to Régie de l'énergie approval, the company has decided to deploy an advanced metering infrastructure (AMI) that requires installation of 3.8 million next generation meters. This new equipment can read customer consumption remotely, thereby eliminating the need to access customers' premises to read meters. The AMI will also perform other remote functions, including accurate, automated power consumption readings, connection and disconnection when customers move, and outage detection.

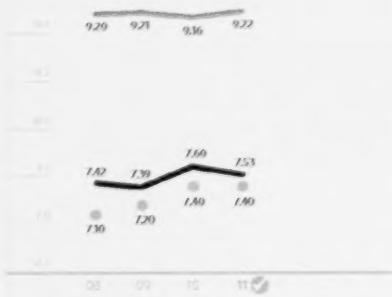
The AMI is a comprehensive solution for the collection and compilation of customer consumption data. The new meters will automatically transmit the information to a data acquisition system that in turn will send it to Hydro-Québec's billing system. The security mechanisms used are among the most stringent, comparable to those in the banking industry.

www.hydroquebec.com/residential/nouveau-compteur/

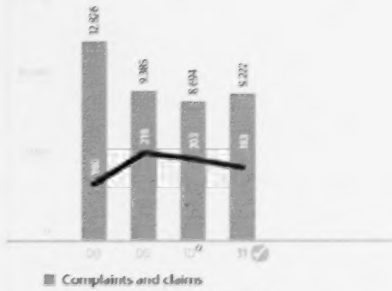
2011 HIGHLIGHTS

- In the first stage of the AMI rollout, 20,000 smart meters were installed in Boucherville, the regional county municipality of Memphrémagog and the Villeray neighborhood in Montréal, in preparation for massive deployment in Montréal and Laval. The results of a public hearing and the decision of the Régie de l'énergie are expected in 2012.

OVERALL CUSTOMER SATISFACTION INDEX (scale of 10)



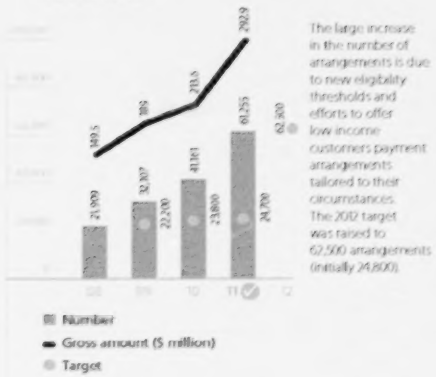
CUSTOMER COMPLAINTS AND CLAIMS (number)



a) Data adjusted to factor in cancelled claims.

François-Xavier Gingras Gosselin installs a next-generation meter for a residential customer in Mansonville in phase one of the advanced metering infrastructure rollout.

PORTFOLIO OF COLLECTION SOLUTIONS: ARRANGEMENTS – LOW-INCOME HOUSEHOLDS[a]



The large increase in the number of arrangements is due to new eligibility thresholds and efforts to offer low-income customers payment arrangements tailored to their circumstances. The 2012 target was raised to 62,500 arrangements (initially 24,800).

a) Includes long-term arrangements.

CUSTOMER SATISFACTION

Customer satisfaction is a priority for Hydro-Québec, and the satisfaction index is one of the main performance indicators. Since 1992, the company has surveyed its different customer categories to determine their priority expectations and their degree of satisfaction.

Since 2000, large-power customers' level of satisfaction has been measured during quality partnership sessions. Hydro-Québec's performance is assessed on the basis of criteria relating to service reliability, technical issues, the regulatory framework, rates, customer service, billing and energy efficiency.

A customer who is dissatisfied and wants to lodge a complaint or claim can use a mechanism established in compliance with the *Act respecting the Régie de l'énergie*.

www.hydroquebec.com/reach_us/plaintes

2011 HIGHLIGHTS

- The large-power customer satisfaction index was 9.22. About 100 quality partnership sessions were held.
- The number of complaints received rose 12% compared to 2010. One of the main reasons for this increase was the fact that more customers contested their bills as a result of the harsher winter than the previous year.

FAIRNESS FOR CUSTOMERS

In order to treat its customers fairly, Hydro-Québec ensures that they all pay for the services they receive. However, we have made some rules more flexible for low-income households; this has meant a 49% increase in the number of arrangements for these customers compared to 2010. We have also adopted a stricter approach to collection from customers who are in arrears.

Disconnection is a last resort and is governed by strict guidelines. From December 1 to March 31, Hydro-Québec maintains or restores service to customers whose homes are heated by electricity and who have failed to pay their bills or to comply with a payment arrangement.

To facilitate business relations during the collection process with customers who do not speak either French or English, Hydro-Québec uses translation services in 19 languages. Four non-profit organizations provide these services and guarantee that information is exchanged in the strictest confidence.

Low-income customers and those with payment difficulties

Since 2000, a working group has experimented with new approaches and has proposed solutions more suited to the reality of these households. The working group members' collaboration led to the development and use of long-term payment arrangements based on customers' ability to pay.

2011 HIGHLIGHTS

- A total of 61,255 payment arrangements were reached with low-income customers, for a gross amount of $292.9 million. Of these arrangements, 9,956, representing a gross total of $10.3 million, provide for debt reduction and, if necessary, reduce the cost for current electricity use.
- 125 employees were trained to handle arrangements with low-income customers.
- For residential customers overall, payment arrangements were reached to settle 202,173 overdue accounts of various types totaling $480.8 million.
- To help during the collection process, a dedicated telephone line was set up for organizations that assist customers who speak neither French nor English.

08 TECHNOLOGICAL INNOVATION

Technicians Joël Fréchette and Francis Barray at IREQ are researching high-power and high-energy cells to be used in ground transportation.

YESTERDAY

In 1970, the company inaugurated its research facility, the Institut de recherche d'Hydro-Québec (IREQ), in the wake of technological advancements that included commissioning the world's first 735-kV transmission line. Technological innovation now drives development at Hydro-Québec.

TODAY

With an annual budget of $100 million, IREQ is continuing its research to improve the power grid's technological performance by making it smarter and more automated. Substantial effort is also being devoted to electrification of public transit and personal transportation, for example by developing materials for lithium-ion batteries.

TOMORROW

IREQ will continue to develop sustainable technology solutions in conjunction with industry, universities and other research centres. The objective is to improve Hydro-Québec's performance and the long-term operability of its facilities.

Electricity will be increasingly important in personal and mass transportation.

Research and innovation are indispensable to optimize power generation and consumption, meet environmental challenges and reduce our environmental footprint. Hydro-Québec plays a leading role in this field through the studies conducted at IREQ, its support for Québec universities and its leadership in ground transportation electrification.

RESEARCH AND INNOVATION

Hydro Québec counts on research and innovation to enhance its operating performance, develop growth areas and improve its customer service. More than 100 research projects are under way in the following fields: asset performance and long-term operability, facility inspection and maintenance, smart power grid, natural water inflow forecasting and electricity generation, energy efficiency, renewable energy and climate change, and ground transportation electrification.

For its innovation projects, IREQ cultivates extensive contacts with universities, government agencies, companies and research centres inside and outside Québec.

www.hydroquebec.com/innovation

2011 HIGHLIGHTS

- Hydro-Québec was named a 2011 Partner of Excellence in research and innovation by the École de technologie supérieure in Montréal.
- A $2.7 million investment in improving hydrological modeling tools and weather data quality for forecasting short- and medium-term inflows will help us deal with the many environmental constraints related to river flow at different times of year throughout the province.
- An agreement was signed by Hydro Québec and Technifin (South Africa) on licensing titanate anodes for lithium-ion batteries, which facilitate recharging and prevent fires.
- The U.S. Department of Energy awarded a research contract worth nearly $5 million to a partnership of Hydro-Québec and Seeo, a California firm, to develop a new rechargeable lithium battery with an entirely solid electrolyte.
- Hydro-Québec, Université de Montréal and France's Centre national de la recherche scientifique signed an agreement with Süd-Chemie in Germany to sublicense patents to produce lithium metal phosphates (LMP), including lithium iron phosphate (LFP), and use them in lithium-ion batteries. A company in Taiwan, Advanced Lithium Electrochemistry, has agreed to build a plant in Québec to produce several thousand tonnes per year.
- The Québec government granted funding to two manufacturers of rechargeable battery materials born of research at Hydro-Québec: $16 million to Bathium Canada (Boucherville) and $7.4 million to Phostech Lithium (Candiac). Total investments by the two companies come to $25.4 million.

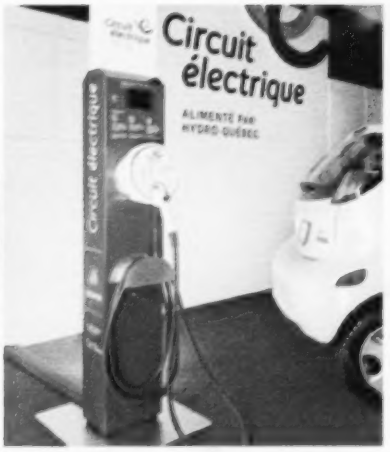
Electricity moves people

The consumption of one million electric vehicles would be:

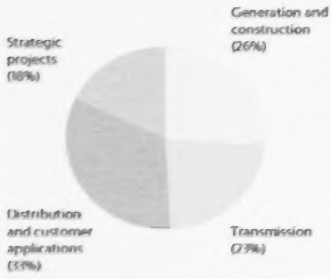
- ***less than 2% of electricity sales in Québec in 2011***
- ***the annual output of a medium-sized hydroelectric generating station (like Eastmain-1 powerhouse).***

Testing of an i-MiEV in the streets of Boucherville. Hydro-Québec is participating in Canada's largest all-electric vehicle trial.

Rollout of The Electric Circuit, Canada's first public charging network, began in spring 2012 in the greater Montréal and Québec areas. Deployment will keep pace with the arrival of electric vehicles on the Québec market.



BREAKDOWN OF IREQ INNOVATION EFFORTS IN 2011 (BY AMOUNT INVESTED)



Note: 76% of the amount invested in innovation projects is related to sustainability.

GROUND TRANSPORTATION ELECTRIFICATION

Hydro-Québec is participating in feasibility studies conducted by public transit authorities to determine exactly what electrical infrastructure will be needed for their electrification projects. For deployment of electric vehicles, the company is focusing on the development and marketing of state-of-the-art technologies, specifically electric motors and battery materials. Our R&D related to electric vehicles has generated $26 million in revenue from sublicences to use lithium metal phosphates to manufacture rechargeable batteries. The company is also conducting road trials, testing the interface with the power grid and planning the necessary charging infrastructure.

www.hydroquebec.com/transportation-electrification

2011 HIGHLIGHTS

- Hydro Québec and its partners (RONA, Les Rôtisseries St Hubert, METRO and the Agence métropolitaine de transport) introduced Canada's first public charging network for electric vehicles. By the end of summer 2012, The Electric Circuit will have 120 240-volt charging stations installed in many of the partners' parking lots.
- Technical and financial support was provided for the deployment of charging facilities for 15 Nissan LEAF all-electric vehicles added to the Communauto fleet. Communauto is one of the largest car sharing services in North America. The number of all-electric vehicles will increase to 50 in 2012.

EXAMPLES OF IREQ'S SUSTAINABLE DEVELOPMENT INNOVATION PROJECTS – 2011

PROJECT	ACHIEVEMENT OR WORK IN PROGRESS	ANNUAL INVESTMENT ($'000)
Aging	Portfolio of projects studying aging mechanisms in materials and equipment in order to increase equipment service life and optimize asset management for economic performance and environmental impacts.	4,000
Environmental support	Discovery of innovative solutions to such issues as treatment of mixed contamination soil, elimination of treated wood poles, control of the SF_6 life cycle, renewable energies to replace generators, electric and magnetic fields, and life cycle analysis.	2,150
Wind power integration portfolio	Design and development of information systems and analysis methods for bringing wind farm output onto the Hydro-Québec grid. Forecasting and description of wind power generation in cooperation with Environment Canada, in view of the intermittence of wind power.	1,200
Energy consumption of buildings	Development of a new version of the SIMEB software. This tool is used to simulate energy consumption in new and existing commercial and institutional buildings for the purpose of optimizing energy efficiency projects. Offered to building professionals at no charge, SIMEB is also used for Hydro-Québec's Buildings Program.	1,190

- The program to test the Toyota Prius Plug-In Hybrid under real-world conditions was completed, in cooperation with the Québec government and Université Laval.
- Ten Chevrolet Volts were added to the Hydro-Québec fleet, broadening road trials to extended range vehicles. The company will assess the contribution of these vehicles to reducing GHG emissions. Ten more Volts will be added to the fleet in 2012.
- Canada's largest all-electric vehicle trial continued, in cooperation with Mitsubishi Canada and the city of Boucherville. By the end of 2013, 30 i-MiEV vehicles will have been tested under real-world conditions.
- The technical feasibility of three public transit electrification projects was confirmed: Montréal streetcars, commuter trains and the trolleybus on Boulevard Pie-IX in Montréal. Funding is still the main issue for these projects.
- Nine public transit authorities tested existing electric technologies.

CONTRIBUTION TO UNIVERSITIES

Hydro-Québec is one of the most generous donors to institutions of higher education in Québec. Through its contributions to schools and research groups, the company encourages development of knowledge in fields of interest to its business and prepares skilled workers for its future requirements. Hydro-Québec's support for 18 research chairs fosters industrial partnerships, maximizing the company's contributions to research.

www.hydroquebec.com/innovation/en/soutien-chaires-universitaires.html

Before I picked up my new car in December and joined in the electric vehicle trials, I had some concerns about how the car would operate and how autonomous it would be.

Taking part in the testing has made me familiar with the car's operation and reassured me about its energy consumption and autonomy. Since my car is mostly parked at home or at work, it is always charging and ready to go. I also wondered how an electric car would perform in winter. I discovered that driving is much the same as in a gas-powered car, only quieter. The car is stable and safe in winter, although power consumption is higher when the heating is on. The most interesting thing, which adds to the pleasure of driving this car, is that a fill-up of electrons costs much less than a gas fill-up.

ISABELLE BLEAU
Owner
Boutique Mère et Mousses
Longueuil

CONTRIBUTIONS, COMMITMENTS, CHAIR ENDOWMENTS AND RESEARCH CONTRACTS ($'000)

EDUCATIONAL INSTITUTION OR RESEARCH GROUP	2008	2009	2010	2011
Université de Montréal	564.9	213.2	244.7	323.1
HEC Montréal	77.5	45.0	31.0	0.0
École Polytechnique de Montréal	912.0	817.2	454.8	632.1
Université du Québec en Abitibi-Témiscamingue	10.5	72.4	51.4	51.0
Université du Québec à Chicoutimi	400.0	225.0	325.4	240.7
Université du Québec à Montréal	906.8	1,643.4	1,521.6	996.1
Université du Québec en Outaouais	164.3	184.4	125.0	0.0
Université du Québec à Rimouski	100.0	50.0	35.0	100.0
Université du Québec à Trois-Rivières	356.4	300.0	300.0	222.0
École de technologie supérieure	348.9	456.6	440.0	379.3
Institut national de recherche scientifique	71.8	196.5	38.5	5.0
Fondation universitaire de l'Université du Québec	-	25.0	0.0	0.0
McGill University	596.0	988.0	1,200.0	1,210.0
Concordia University	320.0	527.0	608.0	600.0
Université Laval	1,382.8	1,149.6	1,300.6	844.1
Université de Sherbrooke	700.0	556.7	526.9	584.5
Ouranos, Cirano and Institute of Electrical Power Engineering	1,572.1	1,690.8	1,706.8	1,839.7
Institutions outside Québec	408.6	453.8	895.8	490.1
Total	**8,892.5**	**9,599.5**	**9,805.4**	**8,517.7**

09 HEALTH AND SAFETY

Safety Advisor Isabelle Lacasse in conversation with Paul Lemay, Manager – Overhead and Underground Work, at Mont-Royal substation in Montreal.

YESTERDAY

Nearly 40 years ago, scientists began studying the effects of electric and magnetic fields (EMFs) on human health. At the same time, Hydro-Québec also initiated research on mercury bioaccumulation in fish and its effects on fishermen's health.

TODAY

The results of hundreds of studies have not shown that EMFs have any effect on human health. As for mercury, the levels observed in fish in developed environments are not harmful to human health. The arrival of next-generation meters is causing some customers to worry about exposure to radio frequencies.

TOMORROW

The health and safety of our customers, employees and the general public will remain a priority for Hydro-Québec. Mercury will continue to be monitored in the Romaine complex reservoirs until 2040.

ELECTRIC AND MAGNETIC FIELDS

Live wires and electrical equipment generate EMFs that are usually imperceptible and low intensity. Their potential effects on the human body have been the focus of research for about 40 years. While a growing number of high-quality studies have been conducted worldwide, no evidence has been found that EMFs affect human health.

www.hydroquebec.com/sustainable-development/champs

2011 HIGHLIGHTS

- In cooperation with the electricity transmission subsidiary of Électricité de France, research continued on the neurophysiological effects of high-intensity magnetic fields on humans.
- A new edition of an informative brochure on electric and magnetic fields was published for the general public.

www.hydroquebec.com/sustainable-development/documentation/pdf/cem/pop_23_01.pdf

- In conjunction with Medtronic and the Montreal Heart Institute, the electromagnetic compatibility of various pacemakers was assessed. These devices can interfere with major electric fields.
- Information on EMFs is distributed at the Électrium, Hydro-Québec's electricity interpretation centre. Over 450,000 visitors have been to the Électrium since it opened in 1991.

www.hydroquebec.com/visit/monteregie/electrium.html

RADIO FREQUENCIES

The installation of next-generation meters is raising concerns among some customers who are wary of exposure to the radio frequencies emitted by this equipment. The average radio frequency level one metre away from the meter is about 100,000 times lower than the Health Canada standard.

The radio frequency emissions are far lower than those of cell phones and wireless (Wi-Fi) routers.

www.hydroquebec.com/residential/nouveau-compteur

MERCURY

Reservoir impoundment alters the mercury in flooded soil and changes how it circulates in the aquatic environment. The result is an increase in fish mercury levels for a period of 10 to 35 years, depending on the fish species and reservoir characteristics.

www.hydroquebec.com/sustainable-development/documentation/mercure.html

2011 HIGHLIGHTS

- Partial diversion of the Rivière Manouane at Lac du Grand Détour, mercury monitoring showed an average concentration of 1.58 mg/kg in the flesh of northern pike seven years after reservoir impoundment. This is 2.3 times more than the average level under natural conditions. Because higher mercury levels in northern pike are generally observed 10 to 15 years after reservoir impoundment, levels here are expected to increase for several years yet. Environmental monitoring shows that the fish consumption guide for the Rivière Manouane area, produced in 2009, is still valid.

www.hydroquebec.com/developpementdurable/documentation/pdf/mercure/mercure_guide_manouane_1.pdf (in French only)

FACILITY SECURITY AND PUBLIC SAFETY

Hydro-Québec has introduced mechanisms to assess and improve its performance with regard to facility security and public safety. Facilities are closely monitored and public awareness campaigns inform people about safe behavior and the hazards of unsafe use of electricity.

2011 HIGHLIGHTS

- Some 400 compliance audits at Hydro-Québec facilities included a public safety component. Result: a compliance rate of 99.4%.
- As part of a security awareness campaign, the toll-free number used to report any situation that poses a security risk received 2,730 calls (2,613 in 2010).
- The safety Web site was enhanced and provides a wealth of information about the company's products and services.

www.hydroquebec.com/security

- Public service announcements informed the public about the three most frequent hazards: pruning, use of a ladder around the house and use of electrical equipment in the backyard, especially near a pool.

EMPLOYEE HEALTH AND SAFETY

Health and safety efforts include a range of measures to help bolster a safety culture. Whether through research, training, awareness and monitoring, or in field operations, Hydro-Québec shares its expertise with workers and the public.

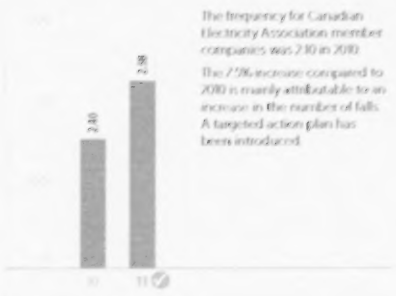
2011 HIGHLIGHTS

- Implementation of the occupational health and safety management system progressed: 79% of the procedures have been developed.
- Occupational health and safety training: 19,859 registrations.
- Number of participants in health awareness and promotion activities: 6,643.
- Themed health weeks on suicide prevention, psychological health at work and prevention of drug abuse were organized. Contributors included the Employee Assistance Program advisory committee composed of company and bargaining unit representatives.
- Two practical guides were developed (for employees and managers) to explain how to prepare for a return to work after an illness.

HEALTH CARE ON REMOTE JOBSITES

As prime contractor, Hydro-Québec provides front-line health care for workers on remote jobsites. Nursing staff is available, as well as telephone medical assistance at any time of day or night.

WORK-RELATED ACCIDENT FREQUENCY[a]



The frequency for Canadian Electricity Association member companies was 2.10 in 2010.

The 7.5% increase compared to 2010 is mainly attributable to an increase in the number of falls. A targeted action plan has been introduced.

a) Per 200,000 hours worked.

2011 HIGHLIGHTS

- On six jobsites, where there are an average of 2,415 workers each month, about thirty nurses in six clinics and three mobile units conducted 11,083 consultations. In 16% of the cases, telephone assistance from an on-duty physician was required and in 3% of cases, evacuation was needed to obtain more specialized care.
- Nurses at Hydro-Québec health centres in northern Québec are also asked to care for people (visitors, hunters, contractors, etc.) passing through areas where health services are limited. In 2011, 745 such people required consultations: 1.9% required medical assistance and 3% had to be evacuated.

ELECTRICAL ACCIDENTS – 2011

	EVENT	DEATHS
Public – Hydro-Québec facility	5	2
Public – use of electricity	1	0
Skilled workers – Hydro-Québec facility	21	1
Skilled workers – use of electricity	3	0
Hydro-Québec employees	126	0
Total	**156**	**3**

Public. Main overall cause of events: pruning. However, we recorded two deaths (zero in 2010), one caused by an attempted theft of copper from equipment and one by contact with the distribution system while putting up Christmas lights.

Skilled workers (outside contractors). Main causes: poor bucket-lift handling and poor work methods. While the number of deaths decreased (five in 2010), regretfully one worker died while pruning a tree, when the pole came into contact with the distribution system.

10 HUMAN RESOURCES

Cable workers Yannick Bujold, Alexandre Décarie and Jean-Bruno Castilloux prepare to install medium-voltage cables at Mont-Royal substation.

YESTERDAY

At the end of the 1990s, Hydro-Québec introduced its first corporate succession plan. The new strategies involved workforce planning and recruitment, skills management and development, and knowledge preservation and transfer.

TODAY

The company maintains a skilled workforce and provides a healthy, safe work environment. It also trains employees and enhances their sustainability awareness: this is a major factor in the company's motivation and recruitment.

TOMORROW

Forward-thinking employers will rely on new communication methods and compliance with the principles of sustainable development, among other things, to recruit committed, well-qualified workers.

To achieve its objectives, Hydro Québec counts on its employees' skills, the quality of their work environment and their commitment to a common objective. In the longer term, in order to recruit good employees in a time of labor shortage, an employer will need a reputation for being able to meet the expectations of new generations of employees.

TRAINING, AWARENESS AND SKILLS

To remain an employer of choice, Hydro-Québec must develop and preserve its employees' know-how and expertise. The company supports the development of employees' and managers' skills by making many services available to them: development strategies, counseling, personalized training, mentoring and courses in various fields.

UNIVERSITY AND COLLEGE INTERNSHIPS AT HYDRO-QUÉBEC

	2008	2009	2010	**2011**
Number of university internships	170	271	440	325
Number of college internships	35	53	54	51
Total	**205**	**324**	**494**	**376**

According to a survey, 90% of university interns would like a job or another internship at Hydro-Québec. The satisfaction rate with overall internship content is 8.5 on a scale of 10.

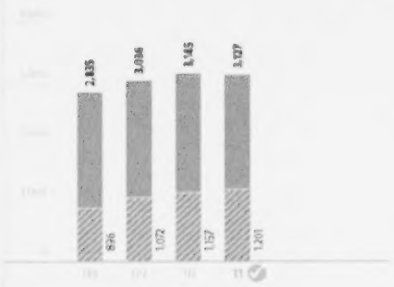
HYDRO-QUÉBEC WORKFORCE – SOME STATISTICS

	2008	2009	2010	**2011**
Total permanent and temporary workforce (number)	22,916	23,090	23,092	22,501
Average age	45.6	45.4	45.2	45.2
Target group representation (%)				
Women	30.9	30.6	30.9	31.1
Aboriginals	0.7	0.8	0.8	0.8
Ethnic minorities	1.0	1.0	1.2	1.3
Visible minorities	2.0	2.2	2.6	3.0
People with disabilities	1.4	1.3	1.2	1.1

The increase in the hiring of women and members of visible minorities is the result of the employment equity program launched in 2009.

Meeting of IREQ's technological innovation management committee: members gather in different locations (Varennes and Shawinigan). To reduce travel and the related GHG emissions, Hydro-Québec makes videoconferencing equipment available to its employees.

ELIGIBILITY AND RETIREMENTS (number)

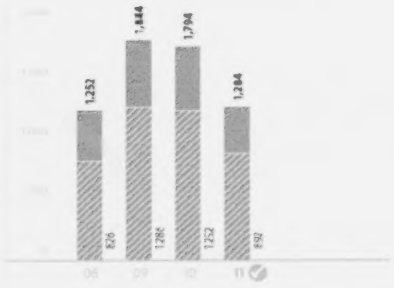


▨ Permanent and temporary employees eligible for retirement

▧ Retirements

In the last five years, over 20% of the permanent workforce has retired. Retirements should stabilize in 2012 and remain just over 1,000 until 2014. More than 5,000 employees could retire between 2012 and 2016. In anticipation of this massive change, the company has taken steps to preserve and renew essential know-how in management and key jobs.

NEW EMPLOYEES RECRUITED (number)



▨ New employees

▧ New employees under age 35

Overall employee commitment index

According to a recent employee survey completed by 14,245 respondents, the overall employee commitment index was 73%. This result reflects the contribution of employees to the company's performance.

2011 HIGHLIGHTS

- 3.4% of the payroll was invested in training programs.
- 15,834 employees participated in at least one training activity.
- Leadership development programs were introduced for managers: 277 managers participated.

WORK ENVIRONMENT

Hydro-Québec ensures that its work environment is healthy, safe and free from discrimination, harassment and violence. The zero-tolerance program and the *Code of Conduct* for employees uphold the company's basic values in this regard. To settle disputes, employees may use various means, including the services of the Corporate Ombudsman.

2011 HIGHLIGHTS

- 84% of employees are unionized under eight collective agreements that are in effect until December 2013 or December 2014.
- More than 1,400 employees and managers took part in a session on courtesy in the workplace, developed by the zero-tolerance committee.
- A new course on the manager's role in preventing harassment was attended by 77 managers.
- Over 700 employees and managers participated in harassment prevention training given by the company and some unions.

SUCCESSION

Given the high number of retirements, Hydro-Québec is preparing new talent and bolstering managers' leadership. In addition, through the employment equity program, now in its third year, the company is making sure that it will have a competent, diversified workforce in a context of labor shortage.

2011 HIGHLIGHTS

- The management succession process was reviewed: this involves creating a pool of candidates, providing support for their development and tracking their careers with the company.
- Financial support continued for the Institute of Electrical Power Engineering (IEPE). To date, 162 IEPE graduates have been hired, including 18 in 2011.
- Six medical students were hired for internships as part of their community health training program.
- 278 managers and human resources staff members participated in training on day to day management of diversity.
- Internships were offered to six high school students from visible and ethnic minorities living in disadvantaged neighborhoods in Montréal.
- 197 new employees belonging to visible and ethnic minorities were hired.
- The 2012 action plan for people with disabilities was developed; this is the seventh edition.

11 COMMUNITY INVESTMENTS

New bridge at Petit Pré, on the Marie-Hélène-Prémont bicycle path near the city of Québec. It was built under the IEP by La Côte-de-Beaupré RCM, after part of a 120-kV line in the Laurentides wildlife reserve was relocated.

YESTERDAY

In 1985, Hydro-Québec created the Environmental Enhancement Program (EEP) to support community projects as compensation for the residual impacts of transmission projects. The EEP became the IEP, the Integrated Enhancement Program.

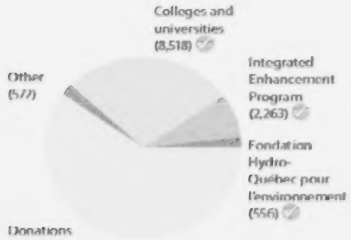
TODAY

Through community investments, Hydro-Québec supports Québec's cultural, social and economic life. The company grants donations and sponsorships to various organizations. It also funds community projects through the Integrated Enhancement Program and the Fondation Hydro-Québec pour l'environnement.

TOMORROW

Hydro-Québec will continue to extend its transmission system to connect new wind farms and hydroelectric generating stations to the grid. Consequently, its contributions to community projects will increase.

COMMUNITY INVESTMENTS – 2011[a] ($'000)


Colleges and universities (8,518)
Integrated Enhancement Program (2,263)
Fondation Hydro-Québec pour l'environnement (556)
Donations and sponsorships, including United Way/Centraide (17,976)
Other (577)

Community investments totaled $30 million. The Other category includes Youth Products ($345,000), the art collection ($700,000) and presentations at universities and colleges ($77,000). Contributions to universities are shown on page 35.

a) LBG Canada has confirmed that, according to its criteria, 99% of the investments recorded constitute community investments.

What is a community investment?

According to LBG Canada (London Benchmarking Group Canada), a community investment standardization network to which Hydro-Québec belongs, a community investment is a contribution to a community that:

- *is voluntary*
- *provides tangible benefit to the community*
- *goes beyond benefits for the company's customers, suppliers or employees*
- *supports a registered non-profit organization or scholarship*
- *represents a cost for the company (employee, supplier and other partner contributions are counted separately)*
- *has a demonstrable value for the community*

Hydro-Québec is often perceived by the public as a responsible corporate citizen. Quebecers expect it to provide reliable service and reasonable rates, set an example and show true commitment to cultural, social and economic life. With its business and community investments, Hydro-Québec's presence is felt throughout the province.

DONATIONS AND SPONSORSHIPS

Hydro-Québec devotes about 1% of its average net income to donations and sponsorships. Every year, the company matches the funds raised by its employees and pensioners for United Way/Centraide. These donations help more than 100,000 people in Québec.

Opening of the Maison du développement durable

Built on land belonging to Hydro-Québec, the Maison du développement durable [centre for sustainable development] is a true environmental and technological showcase in the heart of Montréal's entertainment district. The adjacent Hydro-Québec park was built with recycled materials, including porcelain insulators recovered from the distribution system. Crushed and laid under a grid of recycled steel to serve as a walkway for passersby, these materials allow water to drain into the ground and also reflect light.

2011 HIGHLIGHTS

- Donations and sponsorships amounted to $18 million:[1] the $2.8 million ✓ for United Way/Centraide was added to the $2.8 million ✓ contributed by the company's employees and pensioners. For more details about donations and sponsorships in 2011 and their distribution by funding area, see Hydro-Québec's Web site.

www.hydroquebec.com/publications/en/donation-sponsorship/sponsorships-granted.html

INTEGRATED ENHANCEMENT PROGRAM

To offset the residual impacts of transmission projects, especially on the landscape, Hydro-Québec pays the communities concerned the equivalent of 1% of the value initially authorized for the planned facilities. The IEP funding supports local initiatives. Since 1985, $111 million has been contributed for 1,106 community interest projects.

www.hydroquebec.com/municipal/pmvi.html
(site in French only; English documents available)

2011 HIGHLIGHTS

- Chénier–Outaouais line: $171,094 ✓ was contributed to the city of Mirabel to refurbish a 6.5-km multisport path in Bois de Belle-Rivière regional park. Valued at close to $600,000, the new path, inaugurated in 2011, can be used year round. This initiative is in response to substantial growth of the local population. (Laurentides)

1. LBG Canada has confirmed that, according to its criteria, 92% of the donations and sponsorships granted in 2011 constitute community investments. The balance is given to various groups to support all sorts of activities.

FONDATION HYDRO-QUÉBEC POUR L'ENVIRONNEMENT

With the Fondation Hydro-Québec pour l'environnement, Hydro-Québec demonstrates its desire to support improvement and long-term protection of the environment. The Foundation's activities help the company to honor its commitments to sustainable development and responsible resource management. Since 2001, the Foundation has granted $10.3 million to 177 community projects.

www.hydroquebec.com/fondation-environnement/en/index.html

2011 HIGHLIGHTS

- Funding of $35,000 ✓ was granted to the Corporation du Domaine du Seigneur Taschereau to redevelop a former seigneurial estate as an ecological and historical park (Nouvelle Beauce). The funds will be used to design and install signs and interpretation panels along the Domaine's network of trails. Users will discover various ecosystems, including a marsh, a pond, a swamp, a brook and a river, as well as historical features. (Chaudière-Appalaches)

FUNDING AND FINANCIAL COMMITMENTS – INTEGRATED ENHANCEMENT PROGRAM

	2008	2009	2010	**2011**
Number of initiatives	8	26	32	45 ✓
Hydro-Québec funding ($'000)	208.2	1,652.7	5,910.3	2,262.6 ✓
Community funding ($'000)	106.6	1,719.3	2,932.5	4,395.9
Project value ($'000)	314.8	3,372.0	8,842.8	6,658.5

Hydro-Québec's annual funding varies depending on the number and size of transmission projects in progress. The amount increased substantially in 2010 because of the large sum allocated for construction of Outaouais substation.

COMMITMENTS – FONDATION HYDRO-QUÉBEC POUR L'ENVIRONNEMENT

	2008	2009	2010	**2011** ✓
Number of projects supported	20	19	15	17
Number of regions involved	12	11	9	11
Amount granted ($'000)	1,302	1,021	957	556

Annual funding by the Fondation Hydro-Québec pour l'environnement varies depending on the funds allocated by Hydro-Québec.

GLOBAL REPORTING INITIATIVE INDEX

All Global Reporting Initiative G3 performance indicators, including the Electric Utilities Sector Supplement, are dealt with fully on the Hydro-Québec Web site: www.hydroquebec.com/sustainable-development/gri. The following list shows the indicators that are covered in the *Sustainability Report 2011*.

Disclosure Number[a]	G3 Indicator	Page
ECONOMIC PERFORMANCE INDICATORS		
EC1	Economic value generated and distributed	7, 29, 40-41, 43
EC2	Climate change	3, 11-13
EC6	Procurement from local suppliers	10, 22–24, 27–29, 43
EC7	Local hiring	23, 25, 28-29
EC8	Infrastructure investments that benefit local communities	40-41
EC9	Indirect economic impacts	22–25, 29, 40-41, 43
ENVIRONMENTAL PERFORMANCE INDICATORS		
EN1	Materials used by weight or volume	21
EN2	Use of recycled materials	21
EN3	Direct energy consumption	18
EN4	Indirect energy consumption	18
EN5	Internal energy efficiency	8, 17
EN6	Energy consumption of products and services	8, 16-17
EN8	Total water withdrawal by source	43
EN11	Land near biodiversity areas	21–27
EN12	Description of impacts on biodiversity	21–27
EN13	Habitats protected or restored	21–27
EN14	Management of impacts on biodiversity	21–27
EN15	Number of threatened species with habitats in areas affected by the organization's operations	21
EN16	Greenhouse gas (GHG) emissions	12, 43
EN17	Other relevant GHG emissions	12
EN18	Initiatives to reduce GHG emissions	8, 11–13, 34-35
EN20	Emissions of NO_x, SO_x and other pollutants	12-13, 43
EN22	Total quantity of waste	21
EN23	Number and volume of spills	43
EN26	Environmental impact management	8-9, 21
EN28	Non-compliance with environmental regulation	23, 25, 43
EN29	Environmental impacts of transportation	8
SOCIAL PERFORMANCE INDICATORS		
Labor Practices and Decent Work		
LA1	Total workforce	38, 43
LA2	Employee turnover	39, 43
LA4	Employees covered by collective bargaining agreements	39
LA7	Work-related injuries, diseases and absenteeism	37
LA8	Assistance with serious diseases	37
LA10	Training	38-39
LA11	Skills development and training	38-39
LA13	Diversity and equal opportunity	38-39
Human Rights		
HR4	Number of incidents of discrimination and actions taken	39
Society		
SO1	Management of impacts on communities	10, 28-29, 40-41
Product/Service Responsibility		
PR1	Life-cycle analysis for health and safety of products/services	36-37
PR5	Measurement of customer satisfaction	31
ELECTRIC UTILITIES SECTOR SUPPLEMENT		
Company Profile		
EU1	Installed capacity	Inside cover
EU2	Net energy output	Inside cover
EU3	Number of customers by category	6
EU4	Length of above- and underground transmission and distribution lines	6, 43
Economy – Management Approach		
EU6	Short- and long-term electricity supply	18–20
EU7	Demand-side management programs	16-17
EU8	Research and development activity and expenditure	33-34
Social – Labor Practices and Decent Work – Management Approach		
EU15	Percentage of employees eligible for retirement	39
Social – Society – Management Approach		
EU19	Stakeholder participation in decision-making process	28-29
Social – Product/Service Responsibility – Management Approach		
EU23	Access to electricity and customer support services	32
EU24	Practices to address language and cultural barriers	32
Social – Product/Service Responsibility – Performance Indicator		
EU25	Injuries and fatalities involving company assets	37
EU29	Average power outage duration	30, 43

a) Disclosure number in bold: core indicator.
Disclosure number in regular type: additional indicator.

Global Reporting Initiative™

Statement
GRI Application Level Check

GRI hereby states that **Hydro-Québec** has presented its report "Sustainability report 2011" to GRI's Report Services which have concluded that the report fulfils the requirement of Application Level B+.

GRI Application Levels communicate the extent to which the content of the G3 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, March 29th 2012

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative

B+
GRI REPORT
GRI CHECKED

The "+" has been added to this Application Level because Hydro-Québec has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

Disclaimer: Where the relevant sustainability reporting indicators address links, including to audio-visual material, this statement only concerns material submitted to GRI at the time of the Check on March 23rd 2012. GRI explicitly excludes the statement being applied to any later changes to such material.

OUR PERFORMANCE AT A GLANCE

	2008	2009	2010	2011
ENVIRONMENT				
Net electricity generated by Hydro-Québec (GWh)	164,678	166,809	160,733	169,017
Total net electricity generated and purchased (GWh)	206,603	203,181	203,842	207,693
Renewable energy/total energy generated and purchased (%)	97	97	94	97
Atmospheric emissions of GHGs from thermal electricity generation (t CO_2 eq.)	228,005	369,196	212,038	215,263
Atmospheric emissions of SO_2 from thermal electricity generation (t)	1,154	1,959	1,251	1,423
Atmospheric emissions of NO_x from thermal electricity generation (t)	6,132	6,710	5,965	6,256
Atmospheric emissions of GHGs from the vehicle fleet (t CO_2 eq.)/total number of vehicles as at December 31	55,435/5,255	56,029/5,309	56,259 [c]/5,293	56,005/5,344
Total volume of low- and medium-activity radioactive waste sent to storage (m^3/reactor)	39	90	81	21
Energy efficiency measures: energy savings (result/target) (GWh) [a]	1,061/745	916/985	917/766	965 /688
Employees governed by an environmental management system (number)	18,228	18,757	19,823	19,124
Environmental non-compliance notices (number)	31	20	51	30
Spills reported to the authorities (number)	586	532	747	756
Insulating oil recovered (thousands of litres)/internal reuse (%)	2,989/92.7	4,575/88.4	3,710/91.0	2,608/88.8
Water withdrawn (millions of m^3) [f]	not available	not available	not available	710
Area of transmission line rights-of-way treated mechanically (%)	79	73	71	78
Area of dikes and dams treated mechanically (%)	40	51	73	62
Underground hookups on the distribution system (%)	not available	not available	10.3	10.6
SOCIAL				
Public satisfaction (very and somewhat satisfied) (%)	93	91	92	93
Changes in Hydro-Québec's image (scale of 10)	7.7	7.5	7.7	7.7
Perception of Hydro-Québec's sustainability performance (scale of 10)	7.3	7.2	7.3	7.3
Contracts and procurement – spinoffs for Aboriginals ($M)	310	358	269	155
Funding and financial commitments – Integrated Enhancement Program ($M)/number of initiatives	0.2/8	1.7/26	5.9/32	2.3/45
Fondation Hydro-Québec pour l'environnement ($'000)/number of projects funded	1,302/20	1,021/19	957/15	556/17
Donations and sponsorships ($M) [d]	25.9	22.5	18.3	18.0
Overall customer satisfaction index – other than Large-Power Customers (scale of 10)	7.42	7.39	7.60	7.53
System average interruption duration index (SAIDI) (hours/customer)	2.78	2.74	2.70	2.96
Special payment arrangements for low-income customers (number)	21,909	32,107	41,161	61,255
Customer complaints and claims (number)	12,826	9,385	8,694	9,222
Total permanent and temporary workforce as at December 31	22,916	23,090	23,092	22,501
Overall employee commitment index (%) [e]	not available	not available	not available	73
Work-related accident frequency (per 200,000 hours worked) [f]	not available	not available	2.40	2.58
Percentage of payroll invested in training	4.0	3.9	3.5	3.7
ECONOMY				
Electricity sales in Québec (TWh)	170.4	165.3	169.5	170.0
Revenue from electricity sales inside and outside Québec ($M)	12,364	12,055	12,019	12,119
Net income ($M)	3,015	2,871	2,515	2,611
Dividend ($M)	2,252	2,168	1,886	1,958
Water-power royalties ($M)	552	573	561	598
Total procurement of goods and services ($M)/Québec only (%)	2,660/89	2,925/87	2,998/91	2,913/93
Direct jobs sustained by procurement, including purchases outside Québec (person-years) [g]	11,462	12,333	13,750	12,826
Capital tax ($M) [h]	202	132	51	–
Public utilities tax ($M)	302	188	262	246
Municipal, school and other taxes ($M)	37	35	35	22
Funding for universities – contributions, chair endowments and research contracts ($M)	8.9	9.6	9.8	8.5

a) Adjusted for 2010 fuel bills received in 2011.

b) Includes projects of the Québec government's Bureau de l'efficacité et de l'innovation énergétiques.

c) According to the *Regulation respecting the declaration of water withdrawals* which applies to thermal generating stations and some workcamps using more than 75 m^3 of water per day (excludes withdrawals taken for TPG Canada Inc.).

d) Includes Hydro-Québec's donation to United Way/Centraide.

e) New index in 2011.

f) New calculation method since 2010.

g) Excludes procurement by Société d'énergie de la Baie James.

h) The capital tax was abolished in 2011.

GLOSSARY

anadromous

Refers to a fish that completes most of its growth in the sea but returns to fresh water to spawn.

arbitraging transaction

Financial transaction in which electricity is purchased and resold right away on the same market or on another one to take advantage of differences in market prices.

bulb-type unit

Hydropower generating unit composed of a propeller turbine and a generator encased in a watertight bulb-shaped metal housing.

CF_4 (tetrafluoromethane)

Synthetic chemical compound and potent greenhouse gas that remains in the atmosphere for a long time.

CFC (chlorofluorocarbon)

Synthetic chemical compound used as a refrigerant and in foam insulation; it is both an ozone-depleting substance and a greenhouse gas.

CO_2 (carbon dioxide)

The principal greenhouse gas, mostly generated by fossil fuel combustion.

compensation measure

Means of compensating for residual impacts attributable to projects.

control structure

Structure with moving or stationary parts that control the amount of water flowing through it.

diversion bay

Part of a river or reservoir situated between two control sections that has uniform hydraulic conditions.

forebay

Small reservoir from which water is drawn to supply a generating station.

GHG (greenhouse gas)

Gas in the atmosphere, of natural or man-made origin, that absorbs and emits infrared radiation from the earth's surface.

mitigation measure

Means of eliminating or reducing the negative impacts on the environment of an improvement, development or construction project that is implemented during project execution or upon commissioning.

NO_x (nitrogen oxides)

Chemical compounds that contribute to the formation of smog and acidic deposits.

radio frequency

Frequency of an electromagnetic wave that conventionally ranges between 30 hertz (Hz) and 3,000 gigahertz (GHz).

resource region

Region whose economy depends on natural resources. In Québec, seven regions are considered to be resource regions: Bas-Saint-Laurent, Saguenay–Lac-Saint-Jean, Mauricie, Abitibi-Témiscamingue, Côte-Nord, Nord-du-Québec and Gaspésie–Îles-de-la-Madeleine.

SF_6 (sulphur hexafluoride)

Chemical compound widely used in heavy industry to insulate high-voltage equipment; it is a potent greenhouse gas.

smart grid

Power grid to which information and communication functions have been added to improve performance, reliability and reactivity, from generating facilities to end users.

SO_2 (sulphur dioxide)

Chemical compound that contributes to the formation of acidic deposits.

span

Part of an overhead line between two consecutive support structures.

stakeholder

Individual or group that has an interest in an organization's decisions or operations.

surge arrester

Device used to protect electrical systems and equipment against surge overvoltage produced by lightning or switching operations.

sustainable procurement

Procurement process in which an organization considers social and environmental criteria to ensure that long-term development supports the biophysical, social and economic environment.

unbundling

Modification of the structure and operations of vertically integrated power utilities in which generating, transmission and distribution operations are separated so that they can work independently.

wholesale market

Market on which the purchase and sale of volumes of electricity are negotiated for resale.

REVIEW REPORT

To Hydro-Québec Management

We have been mandated to review certain information contained in Hydro-Québec's *Sustainability Report 2011*, which covers the period from January 1 to December 31, 2011.

Responsibilities of Hydro-Québec Management

Hydro-Québec's *Sustainability Report 2011* has been prepared by the company, which is also responsible for establishing reporting procedures. These procedures include collection and presentation of environmental, social and economic performance results. They also include defining the criteria used to determine whether the information is appropriate for their presentation and, where applicable, complies with criteria and guidelines developed by recognized organizations, including the Global Reporting Initiative. In addition, Management is responsible for keeping adequate records and instituting appropriate internal controls to support the reporting process.

Our responsibility and work performed

Our responsibility consisted not in auditing but in reviewing certain quantitative data which are identified with the ✓ symbol, in accordance with standard ISAE 3000.

Our review essentially consisted of enquiries, analytical procedures, review of reporting procedures and interviews with staff responsible for the information, for the purpose of obtaining limited assurance regarding the quantitative data identified.

We also considered the definition of Hydro-Québec's criteria for the quantitative data selected to see if they included the characteristics of materiality, accuracy, neutrality, clarity and completeness, all of which are necessary for providing high-quality information for the readers of Hydro-Québec's *Sustainability Report 2011*.

Conclusion

Based on the procedures used in our review, nothing came to our attention that would cause us to believe that the quantitative data identified with the ✓ symbol in the *Sustainability Report 2011* are not in all material respects compliant with Hydro-Québec's reporting procedures in terms of materiality, accuracy, neutrality, clarity and completeness.

March 28, 2012

Ernst & Young LLP[1]

Ernst & Young LLP

1. CA auditor permit No. 13764

UNITS OF MEASURE

¢/kWh	cent or $0.01 per kilowatthour
$'000	thousands of dollars
$M	millions of dollars
$B	billions of dollars
V	volt (a unit for measuring voltage)
kV	kilovolt (one thousand volts)
W	watt (a unit for measuring power)
kW	kilowatt (one thousand watts)
MW	megawatt (one million watts)
GW	gigawatt (one million kilowatts)
Wh	watthour (a unit for measuring electric energy)
kWh	kilowatthour (one thousand watthours)
MWh	megawatthour (one million watthours)
GWh	gigawatthour (one million kilowatthours)
TWh	terawatthour (one billion kilowatthours)
t	tonne (metric ton)
g CO_2 eq.	gram of CO_2 equivalent
t CO_2 eq.	tonne of CO_2 equivalent
kt CO_2	one thousand tonnes of CO_2

TO COMMENT ON THIS REPORT

www.hydroquebec.com/sustainable-development

The following documents may be obtained from our Web site **www.hydroquebec.com** or by calling 1 800 ÉNERGIE (363-7443):

Sustainability Report 2011 (this document)

Annual Report 2011

Profil régional des activités d'Hydro-Québec – 2011 (in French only)

Financial Profile 2011–2012

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